

Shree Santkrupa Institute of Engineering and Technology

Department of Mechanical Engineering

Academic Year: 2022-23

Semester: III

Sr. No.	Course Code	Course Name	Lecture	Tutorial	Practical	Credit
1	BTMC302	Fluid Mechanics	3	1		4
2	BTMC304	Material Science and Metallurgy	3	1		4
3	BTMC303	Thermodynamics	3	1		4
4	BTMCL305	Machine Drawing & CAD Lab			4	2
5	BTBS301	Engineering Mathematics -III	3	1		4
6	BTMCL306	Mechanical Engineering Lab-I			4	2
7	BTES209P	IT-1 Evaluation				1
8		Constitution of India				Audit

Semester: IV

Sr. No.	Course Code	Course Name	Lecture	Tutorial	Practical	Credit
1	BTMC401	Manufacturing Process-I	3	1		4
2	BTMC402	Theory of Machine-I	3	1		4
3	BTHM403	Basic Human Rights	3			3
4	BTMC404	Strength of Materials	3	1		4
5	BTMPE405A	Numerical Methods & Technology	3	1		4
6	BTMCL406	Mechanical Engineering lab-II			4	2
7	BTMI407	Field Training /Industrial Training				Credits to be evaluated in Sem V

Semester: V

Sr. No.	Course Code	Course Name	Lecture	Tutorial	Practical	Credit
1	BTMC501	Heat Transfer	3	1		4
2	BTMC502	Machine Design-I	3	1		4
3	BTMC503	Theory of Machine-II	3	1		4
4	BTMPE504D	Automobile Engineering	3			3
5	BTMOE505C	Human Resource Management	3			3
6	BTMC506	Applied Thermodynamics	3	1		4
7	BTMCL507	Mechanical Engineering Lab-III			6	3
8	BTMI407	IT-2 Evaluation				1
9		Artificial Intelligence	3			3

Semester: VI

Sr. No.	Course Code	Course Name	Lecture	Tutorial	Practical	Credit
1	BTMC601	Manufacturing Processes- II	3	1	-	4
2	BTMC602	Machine Design-II	3	1	-	4
3	BTMPE603D	Engineering Metrology and Quality Control	3	-	-	3
4	BTMPE604D	Robotics	3	-	-	3
5	BTMOE605C	Energy Conservation and Management	3	1	-	3

6	BTMCL606	Mechanical Engineering Lab – IV	-	-	6	3
7	BTMS607	B.Tech. Seminar	-	-	2	1
8	BTMP608	Mini Project (TPCS)	-	-	2	2
9	BTMI609 (IT-3)	Field Training	-	-	-	Credits to be evaluated in Sem VIII

Semester: VII

Sr. No.	Course Code	Course Name	Lecture	Tutorial	Practical	Credit
1	BTMEC701	Mechatronics	2	1		3
2	BTMEC702	CAD/CAM	2	1		3
3	BTMEC703	Manufacturing Process-III	2	1		3
4	BTMEC704B	Industrial Engineering and Management	2	1		3
5	BTMEC705D	Knowledge Management	3			Audit
6	BTMEL706	Manufacturing Process Lab -II			2	1
7	BTMEL707	Mechatronics Lab			2	1
8	BTMEL708	CAD/CAM Lab			2	1
9	BTMES709	Seminar			2	1
10	BTMEF710	Industrial Training-III				1
11	BTMEP711	Project Stage-I			6	3

Semester: VIII

Sr. No.	Course Code	Course Name	Lecture	Tutorial	Practical	Credit
1	BTMEC801A	Fundamental of Automotive system				3
2	BTMEC801F	Non Conventional Energy Resources				3
3	BTMEP803	Project Stage-II			30	15

Course Outcomes

Semster : III		
Course Name		Engineering Mathematics – III
Course Code		BTBSC301
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Explain the application of the Laplace Transform to find solutions of system of linear equations arising in many engineering problem	
CO 2	Demonstrate and apply the concept Laplace Transform	
CO 3	Interpret Computation of Fourier Transform and their applications to engineering problems	
CO 4	Identify Partial Differential Equations and Their Applications.	
CO 5	Evaluate Functions of Complex Variables.	
Semster : III		
Course Name		Material Science and Metallurgy
Course Code		BTMC304
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Identify the properties of metals with respect to crystal structure and grain size.	
CO 2	Acquire the knowledge of solidification, phase & equilibrium diagram for different materials	
CO 3	Describe the concept of heat treatment of steels & strengthening mechanisms.	
CO 4	Prepare samples of different materials for metallography.	

CO 5	explain the failure theory, fracture, fatigue properties and NDT testing for different materials.	
Semster : III		
Course Name		Thermodynamics
Course Code		BTMC303
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Define the terms like system, boundary, properties, equilibrium, work, heat, ideal gas, entropy etc. used in thermodynamics	
CO 2	Discuss different laws of thermodynamics and use these to simple thermal systems like balloon, piston-cylinder arrangement, compressor, pump, refrigerator,	
CO 3	Interpret various types of processes like isothermal, adiabatic, etc. considering system with ideal gas and represent them on p-v and T-s planes.	
CO 4	Describe phase diagram of pure substance (steam) on different thermodynamic planes like p-v, T-s, h-s, etc. & show various constant property lines on them.	
Semster : III		
Course Name		Machine Drawing & CAD Lab
Course Code		BTMCL305
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Interpret the object with the help of given sectional and orthographic views.	
CO 2	Construct the curve of intersection of two solids	
CO 3	Outline the machine element using keys, cotter, knuckle, bolted and welded joint	
CO 4	Organize details of any given part. i. e. valve, pump, machine tool part etc.	
CO 5	Make use of tolerances and level of surface finish on production drawings	
Semster : III		
Course Name		Fluid Mechanics
Course Code		BTMC302
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Define fluid and various properties of the fluid, determine hydrostatic forces on the plane and curved surfaces, and explain the stability of floating bodies.	
CO 2	Explain various types of flow, Determine the acceleration of fluid particles.	
CO 3	Apply Bernoulli's equation to simple problems in fluid mechanics.	
CO 4	Explain and solve simple problems related to the use of dimensional analysis, boundary layer theory, and drag and lift force.	
CO 5	Explain the construction and working of centrifugal pumps.	
Semster : III		
Course Name		Mechanical Engineering Lab-I
Course Code		BTMCL306
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Apply Bernoulli's theorem, determine the metacentric height of the floating body.	
CO 2	Determine pressure drop in flow through pipes, pipe fittings, and critical Reynolds number using Reynolds apparatus.	
CO 3	Interpret momentum equation using impact of jet apparatus and determine the viscosity of a given oil sample using a viscometer.	
CO 4	prepare samples of different materials for metallography.	
CO 5	explain the failure theory, fracture, fatigue properties and NDT testing for different materials.	
Semster : IV		
Course Name		Manufacturing Process-I
Course Code		BTMC401
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	identify castings processes, working principles and applications and list various defects in metal casting.	
CO 2	acquire the knowledge the various metal forming processes, working principles and applications.	
CO 3	classify the basic joining processes and demonstrate principles of welding, brazing and soldering.	
CO 4	study center lathe and its operations including plain, taper turning, work holding devices and cutting tool.	
CO 5	describe milling machines operations, cutters, indexing mechanism and their types and related tooling's.	
Semster : IV		

Course Name		Theory of Machine-I
Course Code		BTMC402
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Perform graphically kinematic analysis of any planar mechanism using ICR and RV methods.	
CO 2	Perform graphically kinematic analysis of slider crank mechanism using Klein's construction.	
CO 3	Perform graphically kinematic analysis of slider crank mechanism using Klein's construction.	
CO 4	Sketch polar diagram for a Hooke's joint.	
Semster : IV		
Course Name		Basic Human Rights
Course Code		BTHM403
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Explain the history of human rights.	
CO 2	Recall responsibilities of others caste, religion, region and culture.	
CO 3	Remember the importance of groups and communities in the society.	
CO 4	Analyse the philosophical and cultural basis and historical perspectives of human	
CO 5	Aware of their responsibilities towards the nation.	
Semster : IV		
Course Name		Strength of Materials
Course Code		BTMC404
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Define the fundamental terms such as axial load, eccentric load, stress, strain, E, μ , etc.	
CO 2	Compare the various stress types and determine the value of stress developed in the component in various load cases.	
CO 3	Distinguish between uniaxial and multiaxial stress situations and determine principal stresses, max. Shear stress, their planes, and max. Normal and shear	
CO 4	Analyze given beam for calculations of SF and BM, Explain the use of C- Programming in the strength of materials.	
CO 5	Determine slope and deflection at a point on cantilever /simply supported beam using various methods.	
Semster : IV		
Course Name		BTMPE405A
Course Code		Numerical Methods in Mechanical Engineering
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Discuss the concept of error.	
CO 2	Illustrate the concept of various Numerical Techniques.	
CO 3	Interpret the given Engineering problem using the suitable Numerical Technique.	
CO 4	Develop the computer programming based on the Numerical Techniques.	
Semster : IV		
Course Name		Mechanical Engineering Lab-II
Course Code		BTMCL406
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Illustrate center lathe and its operations including plain, taper turning, work holding devices, and cutting tools.	
CO 2	Define basic terminology of kinematics of mechanisms.	
CO 3	Construct kinematic analysis of slider crank mechanism using Klein's construction and analytical approach.	
CO 4	Analyze the stresses and strain energy in different load cases.	
CO 5	Determine slope and deflection at a point on cantilever /simply supported beam using double integration, Macaulay's, area-moment, and superposition methods.	
Semster : V		
Course Name		Heat Transfer
Course Code		BTMC501

Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Explain the laws of heat transfer and deduce the general heat conduction equation and to explain it for 1-D steady state heat transfer in regular shape bodies	
CO 2	Describe the critical radius of insulation, overall heat transfer coefficient, thermal conductivity and lumped heat transfer	
CO 3	Illustrate the boundary layer concept, dimensional analysis, forced and free convection under different conditions	
CO 4	Describe the Boiling heat transfer, mass transfer and evaluate the heat exchanger and examine the LMTD and NTU methods applied to engineering problems	
CO 5	Explain the thermal radiation black body, emissivity and reflectivity and evaluation of view factor and radiation shields.	
Semster : V		
Course Name		Machine Design-I
Course Code		BTMC502
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Formulate the problem by identifying customer need and convert into design Specification	
CO 2	Understand component behavior subjected to loads and identify failure criteria	
CO 3	Design of machine component using theories of failures	
CO 4	Design of component for finite life and infinite life when subjected to fluctuating load	
CO 5	Design of components like shaft, key, coupling, screw and spring	
Semster : V		
Course Name		Theory of Machines-II
Course Code		BTMC503
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	identify and select type of belt and rope drive for a particular application.	
CO 2	evaluate gear tooth geometry.	
CO 3	select appropriate gears & gear trains for a particular application.	
CO 4	suggest an appropriate governor and characterize flywheels as per engine requirement.	
CO 5	illustrate the gyroscopic effects in ships, aeroplanes, and road vehicles.	
Semster : V		
Course Name		Automobile Engineering
Course Code		BTMPE504D
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Identify and Explain the working of the different parts of the automobile.	
CO 2	Demonstrate various types of drive systems.	
CO 3	Apply vehicle troubleshooting and maintenance procedures.	
CO 4	Analyze the environmental implications of automobile emissions and suggest suitable regulatory modifications.	
CO 5	Evaluate future developments in the automobile technology.	
Semster : V		
Course Name		Human Resource Management
Course Code		BTMOE505C
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Describe trends in the labor force composition and how they impact human resource management practice.	
CO 2	Discuss how to strategically plan for the human resources needed to meet organizational goals and objectives.	
CO 3	Compare and contrast methods used for selection and placement of human resources.	
CO 4	Summarize the activities involved in evaluating and managing employee performance.	
CO 5	Identify and explain the issues involved in establishing compensation systems.	
Semster : V		
Course Name		Applied Thermodynamics
Course Code		BTMC506

Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Define the terms like calorific value of fuel, stoichiometric air-fuel ratio, excess air, equivalent evaporation, boiler efficiency, etc. Calculate minimum air	
CO 2	Discuss and conclude gas power cycles and vapour power cycles like Otto, Diesel, dual, Joule and Rankine cycles and derive expressions for the performance	
CO 3	Classify various types of boiler, nozzle, steam turbine and condenser used in steam power plant. Classify various types of IC engines. Sketch the cut section of	
CO 4	Sketch P-v diagram for single-stage reciprocating air compressor, with and without clearance volume, and evaluate its performance. Differentiate between	
Semster : V		
Course Name		Mechanical Engineering Lab-III
Course Code		BTMCL507
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Interpret the various heat transfer mode of heat transfer and its application and verify.	
CO 2	Explain the concept of terms like least count, calibration of the instruments.	
CO 3	select belt drive for a particular application.	
CO 4	evaluate gear tooth geometry and select appropriate gears, gear trains.	
CO 5	Design of component for finite life and infinite life when subjected to fluctuating load.	
CO 6	Design of components like shaft, key, coupling, screw and spring.	
Semster : VI		
Course Name		Manufacturing Process-II
Course Code		BTMEC601
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	illustrate the process of powder metallurgy and its applications.	
CO 2	calculate the cutting forces in orthogonal and oblique cutting.	
CO 3	evaluate the machinability of materials.	
CO 4	study various abrasive processes.	
CO 5	explain the different precision machining processes.	
Semster : VI		
Course Name		Machine Design-II
Course Code		BTMC602
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Define function of bearing and classify bearings and Understanding failure of bearing and their influence on its selection.	
CO 2	Classify the friction clutches and brakes and decide the torque capacity and friction disk parameter.	
CO 3	Discuss & use materials and configuration for machine element like gears, belts and chain.	
CO 4	Design of elements like gears, belts and chain for given power rating also Design thickness of pressure vessel using thick and thin criteria.	
Semster : VI		
Course Name		Engineering Metrology & Quality Control
Course Code		BTMPE603D
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Identify methods and devices for measurement of length, angle, and gear and thread parameters, surface roughness and geometric features of parts	
CO 2	Choose limits for plug and ring gauges.	
CO 3	Explain methods of measurement in modern machineries	
CO 4	Select quality control techniques and its applications	
CO 5	Plot quality control charts and suggest measures to improve the quality of product and reduce cost using Statistical tools.	
Semster : VI		
Course Name		Robotics
Course Code		BTMPE604D

Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	List the various components of a typical Robot, grippers, sensors, drive system and describe their functions	
CO 2	Estimate the word to joint and joint to word coordinates using forward and reverse transformations and gripper forces, drive sizes, etc.	
CO 3	Develop simple robot program for tasks such as pick and place, arc welding, etc. using some robotic language such as VAL-II, AL, AML, RAIL, RPL, and VAL.	
CO 4	Evaluate the application of robots in applications such as Material Handling, process operations and Assembly and inspection.	
CO 5	Discuss the implementation issues and social aspects of robotics.	
Semster : VI		
Course Name		Energy Conservation and Management
Course Code		BTMOE605C
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Explain energy problem and need of energy management.	
CO 2	Develop energy audit of simple units.	
CO 3	Discuss various financial appraisal methods.	
CO 4	Analyse cogeneration and waste heat recovery systems.	
CO 5	Formulate calculations regarding thermal insulation and electrical energy conservation.	
Semster : VI		
Course Name		Mechanical Engineering Lab-IV
Course Code		BTMCL606
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Determine the cutting forces in orthogonal and oblique cutting	
CO 2	Interpret various abrasive processes.	
CO 3	Explain the failure of bearing and their influence on its selection.	
CO 4	Select materials and configuration for machine element like gears.	
CO 5	Illustrate different laws of thermodynamics and apply these to simple thermal systems to study energy balance.	
Semster : VI		
Course Name		B.Tech. Seminar
Course Code		BTMS607
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Model the exact title of the seminar.	
CO 2	Explain the motivation for selecting the seminar topic and its scope.	
CO 3	Survey pertinent literature and information on the topic.	
CO 4	Critically review the literature and information collected.	
CO 5	Demonstrate effective written and verbal communication.	
Semster : VI		
Course Name		Mini Project
Course Code		BTMP608
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Find the problems of the community. by visiting nearby places.	
CO 2	Select one of the problems for the study, state the exact title of the project and define scope of the problem & explain the motivation, objectives and scope of	
CO 3	Evaluate possible solutions of the problem.	
CO 4	Design, produce, test and analyze the performance of product/system/process.	
Semster : VII		
Course Name		Mechatronics
Course Code		BTMEC701

Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Define sensors and transducers and their applications	
CO 2	Explain the signal conditioning and data representation techniques	
CO 3	Construct pneumatic and hydraulic circuits for a given applications	
CO4	Analyse application of microprocessor and micro controller	
CO5	Determine PI, PD and PID controllers for a given application	
semester:VII		
Course Name		CAD/CAM
Course Code		BTMEC702
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	List and describe the various input and output devices for a CAD work station.	
CO 2	Discuss the 2-D and 3-D transformation positions (Solve problems on 2-D and 3-D transformations) & Describe various CAD modeling techniques with their	
CO 3	Illustrate the basic Finite Element procedure & Explain various components of a typical FMS system, Robotics, and CIM.	
CO 4	Define and differentiate the CAPP systems.	
Semster : VII		
Course Name		Manufacturing Process-III
Course Code		BTMEC703
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	differentiate clearly between NC and CNC machines.	
CO 2	prepare and execute a part program for producing a given product.	
CO 3	select appropriate non-traditional machining process for a given application.	
CO 4	compare different surface coating techniques.	
CO 5	explain different rapid prototyping techniques & Illustrate the working principle of various micro-manufacturing processes.	
Semster : VII		
Course Name		Industrial Engineering and Management
Course Code		BTMEC704B
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Relate the fundamental knowledge and skill sets required in the Industrial Management and Engineering profession.	
CO 2	Build ability to adopt a system approach to design, develop, implement and innovate integrated systems that include people, materials, information, equipment	
CO 3	Interpret the interactions between engineering, businesses, technological and environmental spheres in the modern society.	
CO 4	Decide their role as engineers and their impact to society at the national and global context.	
Semster : VII		
Course Name		Knowledge management
Course Code		BTMEC705D
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Define KM, learning organizations, intellectual capital and related terminologies in clear terms and understand the role of knowledge management in	
CO 2	Demonstrate concepts, and antecedents of management of knowledge and describe several successful knowledge management systems.	
CO 3	Select tools and techniques of KM for the stages of creation, acquisition, transfer, and management of knowledge. also, evaluate tangible and intangible	
CO 4	Evaluate the impact of technology including telecommunications, networks, and internet/intranet role in managing knowledge.	
CO 5	Identify KM in specific environments: managerial and decision making communities; finance and economic sectors; legal information systems; health	
Semster : VII		
Course Name		Manufacturing Process-II Lab
Course Code		BTMEL706
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:

CO 1	illustrate the process of powder metallurgy and its applications.
CO 2	determine the cutting forces in orthogonal and oblique cutting.
CO 3	evaluate the machinability of materials.
CO 4	study various abrasive processes.
CO 5	explain the different precision machining processes.
Semster : VII	
Course Name	Mechatronics Lab
Course Code	BTMEL707
Course Outcome No	Course Outcome Statement
By the end of the course, students will be able to:	
CO 1	Define the key elements of mechatronics system.
CO 2	Explain the characteristics of the temperature sensor.
CO 3	Interpret the Characteristics of LVDT.
CO 4	Create a logic gate using PLC.
CO5	Illustrate the working principle of the Burdon tube pressure gauge.
CO 6	Demonstrate the hydraulics system with its principle
Semster : VII	
Course Name	CAD/CAM Lab
Course Code	BTMEL708
Course Outcome No	Course Outcome Statement
By the end of the course, students will be able to:	
CO 1	Construct CAD part models, assembly model and drafting of machine elements using CAD software.
CO 2	Evaluate stresses in components subjected to simple structural loading using FE software.
CO 3	Summarize and use NC programs for turning and milling.
CO 4	discuss case studies of industrial robots.
Semster : VII	
Course Name	Seminar
Course Code	BTMES709
Course Outcome No	Course Outcome Statement
By the end of the course, students will be able to:	
CO 1	Model the exact title of the seminar.
CO 2	Explain the motivation for selecting the seminar topic and its scope.
CO 3	Survey pertinent literature and information on the topic.
CO 4	Critically review the literature and information collected.
CO 5	Demonstrate effective written and verbal communication.
Semster : VII	
Course Name	Project stage-I
Course Code	BTMEP711
Course Outcome No	Course Outcome Statement
By the end of the course, students will be able to:	
CO 1	Evaluate the state of the field.
CO 2	Analyse a problem and evaluate the potential of a solution or experiment.
CO 3	Synthesise the progress and outputs of your project through professional engineering reports and presentations to a range of audiences including the community
CO 4	Formulate research and technical outputs by applying appropriate techniques, resources and modern engineering tools to a complex open-ended engineering
Semster : VIII	
Course Name	Fundamental of Automotive System
Course Code	BTMEC801A
Course Outcome No	Course Outcome Statement
By the end of the course, students will be able to:	
CO 1	Adapt fundamental knowledge of the various systems of an automobile.
CO 2	Relate the functions of each system with its design and layout.

CO 3	Demonstrate the various systems using simple schematics.	
CO 4	Apply concepts and to determine mathematical models of various automotive systems.	
Semster : VIII		
Course Name		Non Conventional Energy Resources
Course Code		BTMEC801F
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Demonstrate the generation of electricity from various Non-Conventional sources of energy, have a working knowledge on types of fuel cells.	
CO 2	Estimate the solar energy, Utilization of it, Principles involved in solar energy collection and conversion of it to electricity generation.	
CO 3	Explain the concepts involved in wind energy conversion system by studying its components, types and performance.	
CO 4	Illustrate ocean energy and explain the operational methods of their utilization.	
Semster : VIII		
Course Name		Project Stage-II
Course Code		BTMEP803
Course Outcome No	Course Outcome Statement	By the end of the course, students will be able to:
CO 1	Discuss the aim and objectives for this stage of the project.	
CO 2	Construct and demonstrate the tests on the system/product .	
CO 3	Analyze the results of the tests.	
CO 4	Discuss the findings, draw conclusions, and modify the system/product, if necessary.	