SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA
DEPARTMENT OF AUTOMOBILE ENGINEERING
CO OF SE AUTOMOBILE ALL COURSE

SE PART- I	Course 1	Department	Automobile Engineering	SE PART- II	Course 1	Department	Automobile Engineering
Name of Program	Auto. Engg.	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	6E+008
Name of Course	EM-III	Course Code	63380	Name of Course	CM	Course Code	63388
Class				Class	SE		
Course Outcomes		Develop abstract, logical and critical thinking and the ability to reflect critically upon their work. 2. Apply probability theories and statistical techniques to practical engineering problems. . Devise engineering solutions for given situations in their profession.		Course Outcomes		Define basic concept of numerical methods Identify the types of computational method to solve problem. identify mathematical problem and apply it.	

			. Formulate a mathematical model of a real life and engineering problem, solve and interpret the solution in real world.				Help while solving FEA and optimization problem
							Identify difference between computational methods
SE PART- I	Course 2	Department	Automobile Engineering	SE PART- II	Course 2	Department	Automobile Engineering
Name of Program	Automobile Engineering	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	6E+008
Name of Course	ET	Course Code	63381	Name of Course	KOM	Course Code	63389
Class	SE			Class	SE		
Course Outcomes		knowledge about to operate DC motor, DC genrator, Three phase motor		Course Outcomes		Able to select mechanism as per design requirement to get desired motion	
		knowledge about electtrical heating process				Able to analyse velocity and acceleration of given mechanism	
		electronics equipments working & its parts				Able to design cam as per requirement	

			knowledge about microprocessor , OP-amp				able to analyse various characteristics of governor
SE PART- I	Course 3 Automobile Engineering	Department	Automobile Engineering	SE PART- II	Course 3	Department	Automobile Engineering
Name of Program		Program Code	631560210	Name of Program	Automobile Engineering	Program Code	6E+008
Name of Course	ATD	Course Code	63382	Name of Course	MMT	Course Code	63390
Class	SE			Class	SE		
Course Outcomes		Understand basic concepts of physics and chemistry behind thermodynamics		Course Outcomes		1. Students able to classify the different metal alloys.	
		Understand basic concept of entropy				2. Students acquire knowledge of Select the suitable heat treatment process.	
		Analyze the problem of available and unavailable energy				Test the metallurgical properties of metals.	
		Identify problems in gas power cycles and resolve it.				4. Students able tocompare the metals with non-metals.	

			Differentiate between refrigeration and air conditioning				
SE PART- I	Course 4 Automobile Engineering	Department	Automobile Engineering	SE PART- II	Course 4	Department	ile Engineeri
Name of Program		Program Code	631560210	Name of Program	Automobile Engineering	Program Code	6E+008
Name of Course	AMM	Course Code	63383	Name of Course	Fluid Machinery	Course Code	63391
Class	SE			Class	SE		
Course Outcomes			1. Students able to identify various Engineering materials and their properties.	Course Outcomes			Understand working principle of Impulse and Reaction turbine.
			2. Students acquire knowledge of Ferrous Alloys and non-Ferrous Alloys.				Understand the concept of Centrifugal pumps and various efficiencies related to it.
			3. Students understand the knowledge of Casting Process and Metal Forming.				Understand the concept of centrifugal and Axial compressors.
			4. Students able to identify and study advanced manufacturing processes.				Understand working of Gas Turbines and know its various configurations.
SE PART- I	Course 5 Automobile Engineering	Department	Automobile Engineering	SE PART- II	Course 5	Department	Electronic
Name of Program		Program Code	631560210	Name of Program	Automobile Engineering	Program Code	6E+008
Name of Course	Fluid Mechanics	Course Code	63384	Name of Course	SOM	Course Code	63392

Class	SE			Class	SE	
Course Outcomes		Understand properties of fluids and classification of flows		Course Outcomes		different types of stresses, Strains and deformation induced in Mechanical Components due to external loads.
		Formulate and solve equations of the control volume for fluid flow systems				2. To study the distribution of various stresses in Mechanical Elements.
		Calculate resistance to flow of incompressible fluids through closed conduits and over surfaces				3. To study the effect of component dimensions and shape on stresses and deformations
		Apply fundamentals of compressible fluid flows to relevant systems				

SE PART- I	LAB	Department	Automobile Engineering	SE PART- II	LAB	Department	ile Engineeri
Name of Program	Automobile Engineering	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	6E+008
Name of Course	Instrumentation Lab	Course Code	63385	Name of Course	C++	Course Code	63393
Class	SE			Class	SE		

Course Outcomes		To obeseve different microstructures.		Course Outcomes		To understand the fundamentals of Programming languages.
		To verify heat treatment processes and their outcome.				To execute the programme as per requirement.

		To observe cast iron types and its microstructures.					To solve various programmes like addition, substraction and multiplication etc.
		To perform etching process.					
Name of Course	ACD	Course Code	63386	Name of Course	Workshop Practice-IV	Course Code	63394
Class	SE	able to understand BIS Convention of various standard parts		Class	SE		perform various operations on a lathe machine.
Course Outcomes		able to draw free hand sketches of various parts		Course Outcomes			2. To study and demonstrate spur gear manufacturing.
		abble to understand and draw assembly and detail drawing					summarize various safety measures for performing job in a
		able to acquire knowledge of auxilary and intersection of solid					
							Automobile Engineering
SE PART- I	LAB	Department	Automobile Engineering	SE PART- II	LAB	Department	
Name of Program	Automobile Engineering	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	6E+008
Name of Cours	Workshop-III	Course Code	63387	Name of Course	PS-I	Course Code	63395
Class	SE	1. To list and define various casting processes.		Class	SE		Acquire English as a language for specific purpose.
		2. To differentiate various operations on lathe machine and perform practical on same					2.Prepare themselves according to the requirements of professional life.
Course				Course			

Course Outcomes		3. To discuss and summarize various safety measures for performing job in a workshop.	Course Outcomes		3.Improve his personality traits.	
NOTE: Include all the courses mentioned in syllabus structure						
E.G. practical,seminar,mini oriject, project, PSD etc.						

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SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA
DEPARTMENT OFAUTOMOBILE ENGINEERING
CO OF TE AUTOMOBILE COURSES

TE PART- I	Course 1	Department	Automobile Engineering	TE PART- II	Course 1	Department	Automobile Engineering
Name of Program	Auto. Engineering	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	631560210
Name of Course	Dynamics of Machine	Course Code	66256	Name of Course	ICE	Course Code	66900
Class	T.E			Class	TE		
Course Outcomes	1	Apply mathematical principles to perform dynamic force analysis on machine components.			1	Identify various components of engine	
	2	Establish methods for balancing of machine components.			2	Study and Analyze engine cycle and performance.	
	3	Analyze free vibration of various systems.		Course Outcomes	3	Understand fuel supply system and combustion phenomenon.	
	4	Analyze forced vibration of various systems.			4	Understand system like turbocharging,supercharging , MPFI and CRDI , Cooling and lubricating.	

	5	Describe the working principle of gyroscopes.					
TE PART- I	Course 2	Department	Automobile Engineering	TE PART- II	Course 2	Department	Automobile Engineering
Name of Program	Automobile Engineering	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	631560210
Name of Course	HP	Course Code	66257	Name of Course	Vehicle Body Engineering	Course Code	66901
Class	TE			Class	TE		
Course Outcomes	1	Explain fundmental Hydraulic and pneumatics principles.		Course Outcomes	1	Identify the concepts of wind tunnel testing and vehicle body optimization techniques to reduce drag.	
	2	Apply the laws of hydraulics & Pnumatics			2	Explain the concept of car body design, passenger safety, crumple zone and crash testing.	
	3	State ISO/JIC symbols used for hydraulic and pneumatic system.			3	Demonstrate the various types of bus body construction, seating layout, regulations and comfort.	
	4	Demonstrate hydraulic and pneumatic system elements.			4	Correlate the various heavy vehicle bodies, driver's visibility and cabin design.	

	5	Discuss hydraulic and pneumatic circuits with its applications.			4	Correlate the various heavy vehicle bodies, driver's visibility and cabin design.	
	6	Describe troubles and safety regulation in hydraulics and pneumatics.			5	Distinguish the different types of materials and painting techniques for vehicle body	
TE PART- I	Course 3	Department	Automobile Engineering	TE PART- II	Course 3	Department	Automobile Engineering
Name of Program	Automobile Engineering	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	631560210
Name of Co	Auto Chasis	Course Code	66258	Name of Course	AT	Course Code	66902
Class	TE			Class	TE		
Course Outcomes	1	Explain the different types of chassis frames & its construction, materials & testing methods		Course Outcomes	1	Understand basic working principle of basic elements of automobile transmission system.	
	2	Summaries the different steering geometry and types of front axle.			2	Explain working of automatic transmission	
	3	State the various types of suspension systems & its construction			3	Draw performance characteristics of various transmission components.	

	4	its construction			4	Explain working of hydrostatic
	5	5. Identify the different types of braking systems & its construction, advantage & disadvantage.			5	Elaborate electric drive & its advantage & disadvantage.

TE PART- I	Course 4	Department	Automobile Engineering	TE PART- II	Course 4	Department	Automobile Engineering
Name of Program	Automobile Engineering	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	631560210
Name of Course	Metrology & Quality Control	Course Code	66259	Name of Course	MD	Course Code	66903
Class	TE			Class	TE	Able to explain aesthetic and ergonomics to design machine component	
Course Outcomes	1	Distinguish various instruments and their characteristics.		Course Outcomes	1	Able to design shaft,key and different types of coupling as per requirement	
	2	Apply knowledge of instruments to use and interpret the data.			2	Able to design against static load for specific requirement	
	3	Apply knowledge for solving problems on limits , fits and tolerances.			3	Able to design different machine component	

	4	Explain the types of control chart to use, depending on given data.			4	Able to design and select of standard component from manufacturing catilogue	
TE PART- I	Course 5	Department	Automobile Engineering	TE PART- II	Course 5	Department	Automobile Engineering
Name of Program	Automobile Engineering	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	631560210
Name of Course	HMT	Course Code	66260	Name of Course	ARAC	Course Code	66904
Class	TE			Class	TE		
Course Outcomes	1	Define the basic concepts of Heat and Mass Transfer.		Course Outcomes	1	To impart fundamental knowledge of refrigeration & air conditioning	
	2	State and describe mechanism of heat transfer.			2	To study various operating cycles in refrigeration & air conditioning	
	3	Analyze the problem of heat transfer and able to find heat transfer rate and intermediate temperatures.			3	To study various refrigerants used for refrigeration & air conditioning units	
	4	Differentiate between heat and mass transfer.			4	To study the Psychrometric properties of air	

	5	Identify problems in heat and resolve it.			5	To understand design procedure of refrigeration & air conditioning systems for specific application	
	6	Describe and Sketch the types of heat exchanger operations.					
TE PART- I	Course 6	Department	Automobile Engineering				
Name of Program	Automobile Engineering	Program Code	631560210	TE PART- II	Course 5	Department	Automobile Engineering
Name of Course	Industrial Organization and Engineering Economics	Course Code	66261	Name of Program	Automobile Engineering	Program Code	631560210
Class	T.E			Name of Course	CAD/CAM Lab	Course Code	66905
Course Outcomes	1	State the concept of business environment and social responsibility		Class	TE		

				Course Outcomes			
	2	Summarize various functions of management like planning, organizing, staffing, leading etc.			1	To undewrstand 2 D drawings	
	3	Explain basic economic terms and different methods for cost accounting analysis.			2	To understand part design	
	4	Describe financial management and marketing.			3	To draw dess up features and other features regarding to the components.	
	5	Explain production, material management, industrial safety and concept of entrepreneurship.			4	To understand asembly design.	
TE PART- I	LAB	Department	Automobile Engineering	TE PART- II	LAB	Department	Automobile Engineering
Name of Program	Automobile Engineering	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	631560210
Name of Course	PS-II	Course Code	66262	Name of Course	Seminar	Course Code	66906
Class	TE	language for specific purpose.		Class	TE	knowledge about specific technical area.	

Course Outcomes		2. Prepare themselves according to the requirements of professional life.	Course Outcomes		confidence about stage daring & to deliver the seminar content
		3. Possess corporate ethics.			able to improve their proficency in computer.

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BE PART- I	Course 1	Department	Automobile Engineering	BE PART - II	Course 1	Department-	Auto mobile Engi neering
Name of Program	Auto. Engg.	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	6315 60210
Name of Course	ICED	Course Code	67608	Name of Course	AFE	Course Code	67789
Class	BE			Class	BE		
		Acquire knowledge and solve problem related to design for fluctuating load				Students will able to explain different types of alternative fuels & their sources.	
		Student will able to select engine as per requirement				Student will be able to identify modification required for use of alternative fuel in existing engines.	

Left Table

Course Outcomes		student will able to design engine component and accessories as per requirement
		student will able to design vave mechanism and get knowledge about cooling and lubricating system
		student will able to design and select any type of bearing from manufacturing catilauge

BE PART- I	Course 2	Department	Automobile Engineering
Name of Program	Automobile Engineering	Program Code	631560210
Name of Course	VD	Course Code	67609
Class	BE		
		1. Define the basic concepts associated with vehicle dynamics such as lumped mass, coordinate systems and dynamic load transfer.	

Right Table

Course Outcomes		Students will understand production methods of different fuels & their storages methods.
		Students will have knowledge of emission measurements & their regulations.
		Students will able to differentiate of SI & CI engines emissions & their control technologies.

BE PART- II	Course 2	Department	Automobile Engineering
Name of Program	Automobile Engineering	Program Code	631560210
Name of Course	AE	Course Code	67790
Class	BE		
		1. Define basic concept of Automotive battery	

Course Outcomes		2. Define and describe various parameters influencing the acceleration performance.		Course Outcomes		2. Identify the basic types of automotive wiring, types of terminals, and wiring diagrams.	
		3. Classify various breaking systems and design a new braking system according to requirements of specification of a vehicle.				3. Describe the types, construction and operations of automotive battery along with ratings, performance, maintenance, and testing.	
		4. Differentiate between low speed cornering and high speed cornering, calculate parameters such as under-steer gradient, yaw velocity and lateral acceleration gain.				4. Identify ignition and lightening accessory-circuit components, and state their functions	
		5. Discuss various sensors used in automobile and explain new technology in recent automobiles such as ABS, EBD, ESP, Cruise control etc				5. Identify equipments& accessories, sensors and actuators and explain their functions	
BE PART- I	Course 3	Department	Automobile Engineering	BE PART- II	Course 3	Department	Auto mobile Eng ineering
Name of Program	Automobile Engineering	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	6315 60210

Name of Course	Finite Element Method	Course Code	67610	Name of Course	ASD	Course Code	67791
Class	B.E			Class	B.E		
Course Outcomes	1	Understand the need and application of Finite Element Analysis. Formulate and solve problem on Shape function , interpolation function.		Course Outcomes		To list and define various systems in Automobile and their working principles or mechanisms and should be able to explain them	
	2	Formulate, solve and analyze element characteristic matrices for Field problems such as Structural, torsion Field problem using Different Method.				To derive the equation required for design purpose should be able to select materials required for designing a system in an automobile	
	3	Formulate, solve and analyze element characteristic matrices for Field problems such as Thermal Field problem.				To differentiate various systems in automobile, analyze them and will be able to solve related problems	
	4	Analyze and solve the dynamic behavior of structure using FEM.				To design a full or partial system in an automobile, if possible optimize it and explain it with valid methods with good communication.	

	5	Formulate and solve the higher order elements and isoparametric elements. Interpret the Rules of meshing, result interpretation & verification of FEA results.					
BE PART- I	Course 4	Department	Automobile Engineering	BE PART- II	Course 4	Department	Auto mobile Engi neering
Name of Program	Automobile Engineering	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	631560210
Name of Course	VM	Course Code	67858	Name of Course	Vehicle Performance	Course Code	67792
Class	BE			Class	B.E	Recognize the importance of Vehicle Performance.	
Course Outcomes		the student shall gain appreciation & understanding various types of maintenance completed at service station		Course Outcomes	1	Compare automotive clutches, geared transmission.	
		shall be able to know procedure required for wheel allignment & wheel balancing			2	Describe testing procedure of vehicle systems.	
		student shall gain knowledge of dismantaling & assembly of two wheeler single cylinder engine.			3	Identify active and passive safety systems.	

		student shall gain knowledge of CNG & LPG gas kit.			4	Explain causes and remedies for noise and vibration.
			Automobile Engineering		5	
BE PART- I	Course 5	Department				
Name of Program	Automobile Engineering	Program Code	631560210	BE PART- II	Course 4	Department	Automobile Engineering
Name of Course	Transport Management	Course Code	67615	Name of Program	Automobile Engineering	Program Code	631560210
Class	BE	Student will understand the need of transport management		Name of Course	Energy Egineering	Course Code	67797
Course Outcomes		Student will understand the procedure for getting insurance of vehicle after accident.		Class	BE		
		Student will understand the taxation act & various methods of laving.			1	Identify different renewable energy systems.
		Student will understand the organization of passenger transport & its operation		Course Outcomes	2	Explain latest trends in automobile sectors.

						3	Describe basic energy management terms.
						4	Define Geothermal and water energy conversions.
BE PART- I	LAB	Department	Automobile Engineering	BE PART- II	LAB	Department	Auto mobile Eng ineering
Name of Program	Automobile Engineering	Program Code	631560210	Name of Program	Automobile Engineering	Program Code	631560210
Name of Course	ICET	Course Code	67616	Name of Course	Project Phase-II	Course Code	68492
Class	BE	Able to Explain ISI codes for engine testing		Class	BE	Identify the materials and methods for carrying out experiments/develop a code.	
Course Outcomes		To Conduct different tests on IC engine		Course Outcomes		Reorganize the procedures with a concern for society , environment and ethics. •	
		To Analyze test data for finding various parameters of I.C Engines				Analyse, discuss and justify the results/trends and draw valid conclusions. •	
		Able To Explain heat balance sheet				Prepare the report as per recommended format and present the work orally adhering to stipulated time. •	
						Explore the possibility of publish/present a paper in conference	

BE PART- I	LAB	Department	Automobile Engineering				
Name of P	Automobile Engineering	Program Code	631560210				
Name of Course	Automobtive Industrial Training	Course Code	67617				
Class	BE	knowledge about industry working environement professnalism					
Course Outcomes		confidence about stage daring & to deliver the seminar content					
		able to improve their proficency in computer.					
		aware about dressing sense.					
BE PART- I	LAB	Department	Auto. Engg.				
Name of Program	Automobile Engineering	Program Code	631560210				
Name of C	Project Phase-I	Course Code	67618				

Class	BE	Identify the topic in the advanced areas of Automob ile Engineering				
Course Outcome s		Review literature to identify gaps and define objec tives and scope of the work				
		Apply the ideas in the literature and develop research methodology				
		Develop a model , experimental set-up and or computational techniques necessary				

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