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	a.1.An ability to apply knowledge of mathematics and engineering science.
PO2	b.2.An ability to identify, develop and conduct experiments, as well as analyze and interpret data.
PO3	c.3.An ability to design a system component, or process to meet desired needs within realistic constraints.
PO4	d.4.An ability to examine complex problems by conducting the investigations.
PO5	e.5.An ability to plan and execute the projects and manage financial aspects.
PO6	f.6.To understand role play of Automobile engineering solutions in society with contempory issues.
PO7	g.7.An ability to communicate and present effectively in both verbal and written form.
PO8	h.8.An ability to perform and create sustainable working environment.
PO9	i.9.Recognition of need for self-improvement and an ability to engage in lifelong learning
PO10	j.10.An ability to understand professional and ethical responsibilities.
PO11	k.11.An ability to use the techniques, skills, and modern engineering tools necessary for automobile engineering practice.
PO12	l.12.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

Program Educational Objectives (PEOs):

1) Apply technical expertise to interpret, analyse and solve complex and emerging technical problem in the field of automobile engineering
2) Inculcate strong leadership and communication skills in the student top enhance them to global standards
3) Develop moral , ethical standards along with life long learning in students professional currier.

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 engineeringsolutions 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.

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

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

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

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

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

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	3. Students understand the knowledge of Casting Process and Metal Forming.
	4. Students able to identify and study advanced manufacturing processes.

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

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.
	To perform etching process.

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

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.

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

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 FEAand optimization problem		

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

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		

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

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.		

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

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.

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

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		

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

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, substraction and multiplication etc.

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

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

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

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.		

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

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		

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

Name of the Programme	**Automobile Engineering**	**Name of the Course**	**Dynamics of Machine [66256]**
Year	Third Year	**Semester**	V

Course Outcomes

S. No.	Upon successful completion of this course, the student will be able to:
CO1	Apply mathematical principles to perform dynamic force analysis on machine components.
CO2	Establish methods for balancing of machine components.
CO3	Analyse free vibration of various systems.
CO4	Analyse forced vibration of various systems.
CO5	Describe the working principle of gyroscopes.

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

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 typesof 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.

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

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.

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

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.

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

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.		

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

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.

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

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.

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

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.

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

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.

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

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.

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

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 catilogue .

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

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 Psychrometric properties of air
CO5	To understand design procedure of refrigeration & air conditioning systems for specific application

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

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 undewrstand 2 D drawings
CO2	To understand part design
CO3	To draw dess up features and other features regarding to the components.
CO4	To understand asembly design.

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

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 proficency in computer.

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

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 knowledgeand 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 vave mechanism and get knowledge about cooling and lubricating system
CO5	student will able to design and select any type of bearing from manufacturing catilauge

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

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	1. Define the basic concepts associated with vehicle dynamics such as lumped mass, coordinate systems and dynamic load transfer.
CO2	2. Define and describe various parameters influencing the acceleration performance.
CO3	3. Classify various breaking systems and design a new braking system according to requirements of specification of a vehicle.
CO4	4. Differentiate between low speed cornering and high speed cornering, calculate parameters such as under-steer gradient, yaw velocity and lateral acceleration gain.
CO5	5. Discuss various sensors used in automobile and explain new technology in recent automobiles such as ABS, EBD, ESP, Cruise control etc.

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

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 analyzeelement 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 behavior 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.

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

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.

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

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		

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

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 heatbalance sheet		

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

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 proficency in computer.
CO4	aware about dressing sense.

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

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		

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

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.

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

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, constructionand 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

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

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 fordesigning 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.		

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

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.

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

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.

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

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.