Automobile Mechanics & IC Engine Design

(Winter Training Program)

6 Weeks/45 Days

RoboSpecies™

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WINTER TRAINING PROGRAM
Automobile Mechanics & IC Engine Design

Course Name : Automobile Mechanics & IC Engine Design
Certification : By RoboSpecies Technologies Pvt. Ltd. Accredited by International Accreditation Organization, Houston, U.S.A.
Study Material : Study Material & CDs Free to each participant

Fees & Duration

1. For Automobile Mechanics & IC Engine Design **(ADVANCE)**
   Fees : ₹ 9,990/- per candidate
   Duration : 45 Days/ 6 Weeks

	ADVANCE MODULE – Automobile Mechanics & IC Engine Design
DAYS	**TOPICS**
Day 1	Introduction to automobile • Introduction to Extensive Field of automobile Industrial • Application of automobile: Industrial and service. • Introduction to thermodynamics • Basics of system and surrounding • New and Upcoming Technologies
Day 2	Introduction to laws of thermodynamics • First law of thermodynamics. • Second law thermodynamics. • Third law of thermodynamics. • ZEROTH law of thermodynamics.
Day 3	• Introduction to fluid dynamics • Types of fluid motion • Equation of continuity • Bernoulli's theorem • Application to Bernoulli's theorem • Proof of Bernoulli's theorem
Day 4	• Chemical structure of petrol and diesel • Thermodynamic difference between petrol and diesel • Chemical bonding between carbon atom of thermodynamic fuel

Day 5	• Kinematics • Inverse of kinematics
Day 6	**PROJECT**
Day 7	**PROJECT**
Day 8	• Introduction to automobile. • Indian automobile industry • Six sigma rating • Types of locomotive engine
Day 9	• Chassis design • Terminology and types of chassis

Day 10	• Suspension unit
	  ▪ Weight transfer
	  ▪ Jacking force
	  ▪ Anti dive and anti squat
	  ▪ Camber and caster angle
	  ▪ Spring rate

Day 11	• Types of suspension
	  ▪ Dependent type
	  ▪ Independent type
	• Front and rear suspension
	  ▪ Mc person strut
	  ▪ Coil spring

Day 12	• Brief history of IC engine • Introduction to IC engine. • Explanation to working principal of IC engine
Day 13	**PROJECT**
Day 14	**PROJECT**
Day 15	Completion of Basic Module

DAYS	TOPICS
Day 16	• Solid axil, leaf spring and coil spring • Beam axil
Day 17	• Front and rear suspension • Double wishbone • I beam
Day 18	• Types of IC engine • Petrol engine • Diesel engine
Day 19	• Two stroke engine with graph • Four stroke engine with graph • Six stroke engine with graph
Day 20	• IC engine design • New technology of IC engine • Fuel supply system
Day 21	**PROJECT**
Day 22	**PROJECT**
Day 23	• Cooling system in IC engine • Lubrication System
Day 24	• Steering in automobile • Power steering in automobile • New technology in steering in automobile

Day 25	• Fuels and oxidizers
	  ▪ Fuels
	  ▪ Hydrogen
	  ▪ Oxidizers

DAYS	TOPICS
Day 26	• Braking in automobile • Discs brakes • Drum brakes • ABS-anti lock Braking system
Day 27	• Break actuator • Power brake • Master cylinder • Hydraulic brake • Brake fluids
Day 28	**PROJECT**
Day 29	**PROJECT**
Day 30	Completion of Advance Module
Day 31	• Introduction to gears • Types of gears • Mechanism of Gear
Day 32	• Explanation to different types of Gears
Day 33	• Transmission system • Operation of transmission system • Types of transmission system
Day 34	• Exhaust system • New technology in Exhaust system • Exhaust gas treatment
Day 35	• Wheels • Factor that wheel effects • Different types of wheels

DAYS	TOPICS
Day 36	**PROJECT**
Day 37	**PROJECT**
Day 38	• Aerodynamics effects on design • Effect of ground clearance on automobile
Day 39	• Use of electrical and electronics in automobile • Different types automobile using alternative source • Application of electric automobile
Day 40	• Different types of motors used in automobile • Braking effect of electric automobile
Day 41	• Automatic gear changing mechanism • Automatic lock system in automobile • Advantages and disadvantages
Day 42	• GPS and tracking system used in automobile • Difference between f1 race cars and normal cars • Nitro oxide gas fuel use in engine
Day 43	**PROJECT**
Day 44	**PROJECT**
Day 45	Certificate Distribution Cum Farewell Ceremony

Number of Projects Covered in ADVANCE MODULE

1. Hydraulics and Pneumatics.
2. Engine Head Study.
3. Crank Shaft and Piston Case.
4. Differential Mechanism.
5. Oil Pumps and Filters.
6. Engine Lubrication.
7. Electronic Control Unit.
8. Braking System.
9. Clutches and Brakes.
10. Cam Shaft and Design.

Why Automobile Mechanics & IC Engine Design Training from RoboSpecies Technologies?

1. Our syllabus is professionally designed to cover **Basic** as well as **Advance** aspects of Automobile Mechanics & IC Engine Design
2. Each day of our training is well planned to provide you the **Theoretical** as well as **Practical** Knowledge of the module
3. Each day will come up with **New Practicals** & **Projects** which makes the training interesting and exciting.
4. Time to time **Practical Assignments** will be provided to the students, which will help them in doing practice at home.
5. **Revision Time** & **Query Sessions** are provided to the students which help them in clearing their all previous doubts.
6. **Exam** will be conducted at the end of **basic** as well as **Advance** module to test the knowledge level of the students.
7. Time for **Project Work** will be provided to the students, in which students will develop a project of their own choice. This will encourage **Innovative Ideas** among students.

Pre-Requisites

1. Basic knowledge of C\C++ Programming.
2. Basics of Electronics.
3. Eagerness to learn new innovative things.

Who Could Attend this Training?

- Students from B.E/B.Tech/M.Tech/Diploma (ECE/EEE/CSE/IT/MECH) can join this training.
- Anyone who have interest in this field and have pre-requisite knowledge