



# SUMMER TRAINING PROGRAM

## Automobile Mechanics & IC Engine Design

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

### Fees & Duration

- For Automobile Mechanics & IC Engine Design (**Basic**)  
**Fees** : ₹ 7,990/- per candidate  
**Duration** : 30 Days/4 Weeks

BASIC MODULE – Automobile Mechanics & IC Engine Design	
DAYS	TOPICS
Day 1	<p>Introduction to automobile</p> <ul style="list-style-type: none"><li>• Introduction to Extensive Field of automobile Industrial</li><li>• Application of automobile: Industrial and service.</li><li>• Introduction to thermodynamics</li><li>• Basics of system and surrounding</li><li>• New and Upcoming Technologies</li></ul>
Day 2	<p>Introduction to laws of thermodynamics</p> <ul style="list-style-type: none"><li>• First law of thermodynamics.</li><li>• Second law thermodynamics.</li><li>• Third law of thermodynamics.</li><li>• ZEROTH law of thermodynamics.</li></ul>
Day 3	<ul style="list-style-type: none"><li>• Introduction to fluid dynamics</li><li>• Types of fluid motion</li><li>• Equation of continuity</li><li>• Bernoulli's theorem</li><li>• Application to Bernoulli's theorem</li><li>• Proof of Bernoulli's theorem</li></ul>
Day 4	<ul style="list-style-type: none"><li>• Chemical structure of petrol and diesel</li><li>• Thermodynamic difference between petrol and diesel</li><li>• Chemical bonding between carbon atom of thermodynamic fuel</li></ul>

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Day 5	<ul style="list-style-type: none"><li>• Kinematics</li><li>• Inverse of kinematics</li></ul>
Day 6	<b>PROJECT</b>
Day 7	<b>PROJECT</b>
Day 8	<ul style="list-style-type: none"><li>• Introduction to automobile.</li><li>• Indian automobile industry</li><li>• Six sigma rating</li><li>• Types of locomotive engine</li></ul>
Day 9	<ul style="list-style-type: none"><li>• Chassis design</li><li>• Terminology and types of chassis</li></ul>
Day 10	<ul style="list-style-type: none"><li>• Suspension unit<ul style="list-style-type: none"><li>▪ Weight transfer</li><li>▪ Jacking force</li><li>▪ Anti dive and anti squat</li><li>▪ Camber and caster angle</li><li>▪ Spring rate</li></ul></li></ul>
Day 11	<ul style="list-style-type: none"><li>• Types of suspension<ul style="list-style-type: none"><li>▪ Dependent type</li><li>▪ Independent type</li></ul></li><li>• Front and rear suspension<ul style="list-style-type: none"><li>▪ Mc person strut</li><li>▪ Coil spring</li></ul></li></ul>
Day 12	<ul style="list-style-type: none"><li>• Brief history of IC engine</li><li>• Introduction to IC engine.</li><li>• Explanation to working principal of IC engine</li></ul>
Day 13	<b>PROJECT</b>
Day 14	<b>PROJECT</b>
Day 15	Completion of Basic Module

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Day 16	<ul style="list-style-type: none"><li>• Solid axil, leaf spring and coil spring</li><li>• Beam axil</li></ul>
Day 17	<ul style="list-style-type: none"><li>• Front and rear suspension</li><li>• Double wishbone</li><li>• I beam</li></ul>
Day 18	<ul style="list-style-type: none"><li>• Types of IC engine</li><li>• Petrol engine</li><li>• Diesel engine</li></ul>
Day 19	<ul style="list-style-type: none"><li>• Two stroke engine with graph</li><li>• Four stroke engine with graph</li><li>• Six stroke engine with graph</li></ul>
Day 20	<ul style="list-style-type: none"><li>• IC engine design</li><li>• New technology of IC engine</li><li>• Fuel supply system</li></ul>
Day 21	<b>PROJECT</b>
Day 22	<b>PROJECT</b>
Day 23	<ul style="list-style-type: none"><li>• Cooling system in IC engine</li><li>• Lubrication System</li></ul>
Day 24	<ul style="list-style-type: none"><li>• Steering in automobile</li><li>• Power steering in automobile</li><li>• New technology in steering in automobile</li></ul>

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DAYS	TOPICS
Day 25	<ul style="list-style-type: none"><li>● Fuels and oxidizers<ul style="list-style-type: none"><li>▪ Fuels</li><li>▪ Hydrogen</li><li>▪ Oxidizers</li></ul></li></ul>
Day 26	<ul style="list-style-type: none"><li>● Braking in automobile</li><li>● Discs brakes</li><li>● Drum brakes</li><li>● ABS-anti lock Braking system</li></ul>
Day 27	<ul style="list-style-type: none"><li>● Break actuator</li><li>● Power brake</li><li>● Master cylinder</li><li>● Hydraulic brake</li><li>● Brake fluids</li></ul>
Day 28	<b>PROJECT</b>
Day 29	Completion of Advance Module
Day 30	Certificate Distribution Cum Farewell Ceremony

### Number of Projects Covered in BASIC MODULE

1. Hydraulics and Pneumatics.
2. Engine Head Study.
3. Crank Shaft and Piston Case.
4. Differential Mechanism.
5. Oil Pumps and Filters.

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### 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 Practical's & 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