

1. SALIENT FEATURES OF THE DIPLOMA PROGRAMME IN AUTOMOBILE ENGINEERING

- 1) Name of the Programme : Diploma Programme in Automobile Engineering
- 2) Duration of the Programme : Three years (Six Semesters)
- 3) Entry Qualification : Matriculation or equivalent as prescribed by State Board of Technical Education, Haryana
- 4) Intake : 40/60 (or as prescribed by the Board)
- 5) Pattern of the Programme : Semester Pattern
- 6) Ratio between theory and Practice : 45 : 55 (Approx.)

7) **Industrial Training:**

Four weeks of industrial training is included after IV semester during summer vacation. Internal assessment out of 50 marks and external assessment out of another 50 marks will be added in 5th semester. Total marks allotted to industrial training will be 100.

Distribution of Marks:

- Daily diary and reports of training - 50 Marks
- Viva Voce (External) - 50 Marks

8) **Ecology and Environment:**

As per Govt. of India directives, a subject on Environmental Education has been incorporated in the scheme.

9) **Entrepreneurship Development:**

A subject on Entrepreneurship Development and Management has been incorporated in the scheme.

10) **Student Centred Activities:**

A provision of 5-6 hrs per week has been made for organizing Student Centred Activities for overall personality development of students. Such activities will comprise of co-curricular activities like extension lectures, library studies, games, hobby clubs e.g. photography, painting, singing, seminars, declamation contests, educational field visits, N.C.C., NSS, Cultural Activities, Civil Defence/ Disaster Management activities etc.

2. EMPLOYMENT OPPORTUNITIES FOR DIPLOMA HOLDERS IN AUTOMOBILE ENGINEERING

After having detailed discussions with professionals of Automobile Industry, following employment opportunities are identified for a diploma holder in Automobile Engineering at his entry level in profession:

Supervisor in Automobile Industry

Junior Engineer/Chargeman/Foreman in R&D, manufacturing, assembly, vehicle testing/engine testing, quality control, repair and maintenance, marketing, sales and servicing in:-

- i) Automobile and auto ancillary industry
- ii) Ordnance factory, DRDO, National Automotive Testing & R&D Infrastructure Project (NATRIP) and similar organizations

Supervisor in State Transport workshops/Service Department of Government as well as Private Sector and Garages

Garage Supervisor/Foreman/Service Station Incharge/Junior Engineer in following organizations:

- i) State transport authorities
- ii) Garages of municipal corporations and other public/private sector undertakings
- iii) Maintenance department of heavy earth moving equipment
- iv) Repair and maintenance of Tractor and Agriculture equipment in service center
- v) Military Engineering Service

Junior Engineer/Sectional Officer in Government departments like PWD/Electricity Boards/Railways/Dock yards/Para military forces.

Inspector

- Motor Vehicle Authority
- Pollution Level Testing
- Driving Test

Surveyor in Insurance Companies

Instructor in Technical Institutions

Self Employment: Some of diploma holders may start their own ventures like garages/Service Stations/Annual Maintenance Contractors.

3. COMPETENCY PROFILE OF DIPLOMA HOLDERS IN AUTOMOBILE ENGINEERING

Keeping in view the employment opportunities, a diploma holder in Automobile Engineering should have following competencies:

1.	Development of knowledge and skills in communication, interpersonal relations, appropriate attitudes and value system.
2.	Development of competencies in reading and interpreting drawings pertaining to different components, sub-assemblies and assembly of automobile and related equipment
3.	Knowledge and skills regarding basic concepts, principles, constructional details and working of an automobile.
4.	Understanding regarding specifications and standards of materials and components used in the manufacture of an automobile.
5.	Development of skills in inspection and testing of an automobile as per laid standards.
6.	Development of skills in diagnosing and fault finding and rectifications of the same in an automobile.
7.	Knowledge and skill to manage routine, preventive and emergency maintenance.
8.	Development of competency to design simple components and mechanism of an automobile.
9.	Development of competency to manage the inventory and waste in industry.
10.	Development of managerial skills to plan and execute shop floor operations for the manufacturing/production/servicing of automobile as per laid targets/schedule quality standards.
11.	Development of knowledge and skills in managing pollution control standards, and safety standards.
12.	Competency to manage a garage
13.	Understanding of resource system helping in the financing and managing of small enterprise
14.	Development of basic understanding in the use of computer in automobile industry.
15.	Knowledge of Motor Vehicle Act, Motor Vehicle Rules and relevant State Laws.
16.	Knowledge of Applied Science and Engineering Science subjects which will serve as foundation for technology subjects.

4. DERIVING CURRICULUM AREAS FROM COMPETENCY PROFILE

1.	Development of knowledge and skills in communication, interpersonal relations, appropriate attitudes and value system.	<ul style="list-style-type: none"> - Communications Skills - Employability Skills
2.	Development of competencies in reading and interpreting drawings pertaining to different components, sub-assemblies and assembly of automobile and related equipment	<ul style="list-style-type: none"> - Engineering Drawing - Automobile Engineering Drawing - CAD
3.	Knowledge and skills regarding basic concepts, principles, constructional details and working of an automobile.	<ul style="list-style-type: none"> - Chassis, Body and Transmission - Auto Engines - Auto Electrical and Electronics systems - Mechanics of Vehicles
4.	Understanding regarding specifications and Standards of materials and components used in the manufacture of an automobile.	<ul style="list-style-type: none"> - Materials and Metallurgy
5.	Development of skills in inspection and testing of an automobile as per laid standards.	<ul style="list-style-type: none"> - Elements of Mechanical Engineering
6.	Development of skills in diagnosing and fault finding and rectifications of the same in an automobile.	<ul style="list-style-type: none"> - Fault Diagnosis and Testing Lab - Overhauling Lab - Driving Practice - Tractor and Special Purpose Vehicle - Project Work
7.	Knowledge and skill to manage routine, preventive and emergency maintenance.	<ul style="list-style-type: none"> - Fault Diagnosis and Testing Lab - General Workshop Practice - Automobile Workshop
8.	Development of competency to design simple components and mechanism of an automobile.	<ul style="list-style-type: none"> - Strength of Materials
9.	Development of competency to manage the inventory and waste in industry.	<ul style="list-style-type: none"> - Entrepreneurship Development and Management

10.	Development of managerial skills to plan and execute shop floor operations for the manufacturing/production/servicing of automobile as per laid targets/schedule quality standards.	- Entrepreneurship Development and Management
11.	Development of knowledge and skills in managing pollution control standards and safety standards.	- Motor Vehicle Act and Transport Management
12.	Competency to manage a garage	- Garage Equipment
13.	Understanding of resource system helping in the financing and managing of small enterprise	- Entrepreneurship Development and Management
14.	Development of basic understanding in the use of computer in automobile industry.	- Basics of Information Technology - Computer Aided Drafting
15.	Knowledge of Motor Vehicle Act, Motor Vehicle Rules and relevant State Laws.	- Motor Vehicle Act and Transport Management
16.	Knowledge of Applied Science and Engineering Science subjects which will serve as foundation for technology subjects.	- Applied Physics - Applied Chemistry - Applied Mathematics - Elements of Mechanical Engineering - Applied Mechanics - Basics of Electrical and Electronics Engineering

5. ABSTRACT OF CURRICULUM AREAS

Following is the abstract of curriculum areas:

a) General Studies

1. Communication skills
2. Basics of Information Technology
3. Employability Skills
4. Environmental Education
5. Entrepreneurship Development and Management

b) Applied Science

6. Applied Mathematics
7. Applied Physics
8. Applied Chemistry

c) Basic Courses in Engineering/Technology

9. Strength of Materials
10. Applied Mechanics
11. Engineering Drawing
12. Basics of Electrical and Electronics Engineering
13. Elements of Mechanical Engineering
14. General Workshop Practice

d) Applied Courses in Engineering/Technology

15. Automobile Engineering Drawing
16. Auto Engines
17. Materials and Metallurgy
18. Chassis, Body and Transmission
19. Garage Equipment
20. Auto Electrical and Electronics Systems
21. Driving Practice
22. Entrepreneurship Development and Management
23. MVA and Transport Management
24. Automobile Workshop
25. Industrial Engineering
26. Mechanics of Vehicles
27. Garage Equipment
28. Fault Diagnosis and Testing Lab.
29. Overhauling Lab
30. Computer Aided Drafting
31. Tractor and Special Purpose Vehicles
32. Project Work

6. HORIZONTAL AND VERTICAL ORGANISATION

Sr. No.	Subject	Distribution of time in various semesters					
		I	II	III	IV	V	VI
1.	Communication Skills	5	5	-	-	-	-
2.	Applied Mathematics	5	5	-	-	-	-
3.	Applied Physics	6	6	-	-	-	-
4.	Applied Chemistry	5	5	-	-	-	-
5.	Engineering Drawing	6	6	-	-	-	-
6.	General Workshop Practice	6	6	-	-	-	-
7.	Basics of Information Technology	4	-	-	-	-	-
8.	Applied Mechanics	-	5	-	-	-	-
9.	Strength of Materials	-	-	6	-	-	-
10.	Elements of Mechanical Engineering	-	-	4	-	-	-
11.	Basics of Electrical and Electronics Engineering	-	-	5	-	-	-
12.	Manufacturing Technology	-	-	8	8	-	-
13.	Automobile Engineering Drawing	-	-	6	-	-	-
14.	Automobile Workshop	-	-	6	-	-	-
15.	Materials and Metallurgy	-	-	-	5	-	-
16.	Mechanics of Vehicles	-	-	-	4	-	-
17.	Auto Engines	-	-	-	8	9	-
18.	Chassis, Body and Transmission	-	-	-	8	9	-
19.	Computer Aided Drafting	-	-	-	3	-	-
20.	Garage Equipment	-	-	-	-	3	-
21.	Auto Electrical and Electronics Systems	-	-	-	-	3	-
22.	Environmental Education	-	-	-	-	3	-
23.	Employability Skills	-	-	-	-	2	2
24.	Driving Practice	-	-	-	-	6	5
25.	Entrepreneurship Development and Management	-	-	-	-	-	3
26.	Motor Vehicle Act and Transport Management	-	-	-	-	-	3
27.	Tractor and Special Purpose Vehicles	-	-	-	-	-	3
28.	Industrial Engineering	-	-	-	-	-	4
29.	Fault Diagnosis and Testing Lab	-	-	-	-	-	5
30.	Overhauling Lab	-	-	-	-	-	5
31.	Project Work	-	-	-	-	-	5
32.	Student Centered Activities	3	2	5	4	5	5
	Total	40	40	40	40	40	40