1. SALIENT FEATURES OF THE DIPLOMA PROGRAMME IN MECHANICAL ENGINEERING (PRODUCTION)

1)	Name of the Programme	:	Diploma Programme in Mechanical Engineering (Production)
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	:	50 : 50 (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 MECHANICAL ENGINEERING (PRODUCTION)

The following are the major employment opportunities for diploma holders in Mechanical Engineering (Production):

- In manufacturing industry primarily in private sector and to some extent in public sector

- In service sector like Railways, Hospitals, Military Engineering Services, Boards and Corporations, Construction Companies, Transportation Departments, Telecommunication, PWD and Rural Development Agencies.

- In marketing sector for sales and after- sales services

- As an entrepreneur

  Though the diploma holders in Mechanical Engineering (Production) find placement in all functional areas like R&D, planning, shop floor production, quality control, inventory management but majority of them find employment in shop floor management.

3. COMPETENCY PROFILE OF DIPLOMA HOLDERS IN MECHANICAL ENGINEERING (PRODUCTION)

Keeping in mind the employment opportunities, a diploma holder in Mechanical Engineering (Production) should have following competencies:

1. Skills in preparing, interpreting Mechanical Engineering drawing, and able to prepare part/spare drawings from existing available sample.

2. Understanding about various forms, characteristics, testing, usage and standards of various types of materials used in Mechanical Engineering industry and advances in the field of materials.

3. Well versed with basic production processes, tools and equipment including use of high-tech machines, CNC machines and PLC (programmable Logic Control) machines for increased productivity and quality.

4. Knowledge regarding various measuring instruments and skill of operating instruments and inspection techniques.

5. Knowledge about quality management techniques and skill in implementing quality control tools.

6. Understanding regarding procedures for installation, erection, layout, testing and maintenance of machines/equipment

7. Preparing process schedules, material schedule and manpower schedules.

8. Knowledge and skills in the operation and maintenance of various plant facilities like material handling equipment and operating facilities.

9. Knowledge and skills to maintain suitable records of production and services analyze operational efficiency and cause of waste and take remedial action.

10. Competencies in carrying out work study and knowledge of plant layout and material handling especially movement of material on the shop floor and work-in-process.

11. Competency in problem solving in various functional areas may it be prototype development, diagnostic and faultfinding or repair and maintenance of plant and equipment.

12. Knowledge and skills in communication, interpersonal relations and basic skills in management.

13. Knowledge about Quality Management systems like ISO, Quality Systems, Technical Specifications.

14. Understanding regarding labour management and awareness regarding Laws and Acts related to labour welfare, environment, health and safety.

15. Knowledge about effluents and pollution and methods to control pollution.

16. Skills in making use of computers for different types of applications in the field of Mechanical Engineering.

17. Appreciation regarding leadership, team building and coordinated functioning for achieving desired targets.

18. Continued learning skills for problem solving.

19. Knowledge and skills in applied sciences so as to develop scientific temper and their applications in technology subjects and as a foundation for continued learning.

20. Knowledge and skills in Engineering Sciences like material sciences, Engineering Graphics, Applied Mechanics, Mechanics of Solids, Fluid Mechanics, Thermodynamics, Electrical and Electronics Engineering, which are pre-requisite to understand technology subjects.

21. Appreciation of appropriate attitudes, professional ethics and values.

22. Awareness regarding facilities and support system to promote entrepreneurship.

4. DERIVING CURRICULUM AREAS FROM COMPETENCY PROFILE

Sr. No.	COMPETENCY PROFILE	CURRICULUM AREAS
1.	Skills in preparing, interpreting Mechanical Engineering drawing, and able to prepare part/drawings of existing available sample	▪ Engineering Drawing ▪ Machine Drawing
2.	Understanding about various forms, characteristics, testing, usage and standards of various types of materials used in Mechanical Engineering industry and advances in the field of materials	▪ Materials and Metallurgy
3.	Well versed with production processes, tools and equipment including use of high-tech machines, CNC machines and PLC (Programmable Logic Control) machines for increased productivity and quality.	▪ Workshop Technology ▪ CNC Machines and Automation ▪ Workshop Technology ▪ Theory of Machines ▪ Workshop Practice
4.	Knowledge and skills regarding various measuring instruments, process instrumentation, and inspection techniques.	▪ Inspection and Quality Control ▪ General Workshop Practice
5.	Knowledge about quality techniques and skill in implementing quality control	▪ Inspection and Quality Control
6.	Preparing process schedules, material schedules, manpower schedules.	▪ Industrial Engineering
7.	Knowledge and skills in the operation and maintenance of various plant facilities like material handling equipment and operating facilities.	▪ Thermodynamics ▪ Refrigeration and Air Conditioning
8.	Knowledge and skills to maintain suitable records of production and services analyze operational efficiency and cause of waste and take remedial action.	▪ Industrial Engineering
9.	Competency in carrying out work study knowledge of plant layout and material handling especially movement of material on the shop floor and work-in-process	▪ Industrial Engineering
10.	Competency in problem solving in various functional areas may it be prototype development, diagnostic and faultfinding or repair and maintenance of plant and equipment.	▪ Machine design and drawing ▪ Project work
11.	Conducting survey and collection of feedback/data from customers/users regarding performance of products and preparation of test/survey reports, their analysis and presentation	▪ Employability Skills

12.	Knowledge and skills in communication, interpersonal relations and basic skills in management.	▪ Communication skills ▪ Entrepreneurship Development and Management
13.	Knowledge about Quality Management systems like ISO, Quality Systems, Technical Specifications.	▪ Inspection and Quality Control
14.	Understanding regarding labour management and awareness regarding Laws and Acts related to labour welfare, safety and environment.	▪ Entrepreneurship Development and Management
15.	Knowledge about effluents and pollution and methods to control pollution.	▪ Environmental Education
16.	Skills in making use of computers for different types of applications in the field of Mechanical Engineering.	▪ Basics of Information Technology ▪ CNC Machines and Automation ▪ CAD
17.	Appreciation regarding leadership, team building and coordinated functioning for achieving desired targets.	▪ Employability Skills
18.	Continued learning skills for problem solving.	▪ Project Work ▪ Student Centered Activities
19.	Knowledge and skills in applied sciences so as to develop scientific temper and their applications in technology subjects and as a foundation for continued learning.	▪ Applied Physics ▪ Applied Chemistry ▪ Applied Mathematics
20.	Knowledge and skills in Engineering Sciences like material sciences, Engineering Graphics, Applied Mechanics, Mechanics of Solids, Fluid Mechanics, Thermodynamics, Electrical and Electronics Engineering, which are pre-requisite to understand technology subjects.	▪ Materials and Metallurgy ▪ Applied Mechanics ▪ Strength of Materials ▪ Basics of Electrical & Electronics Engineering ▪ Thermodynamics ▪ Hydraulics and Hydraulic Machines
21.	Appreciation of appropriate attitudes, professional ethics and values.	▪ Employability Skills
22.	Awareness regarding facilities and support system to promote entrepreneurship.	▪ Entrepreneurship Development and Management

5. ABSTRACT OF CURRICULUM AREAS

Following is the abstract of curriculum areas:

5.1 Applied Science

- Applied Mathematics
- Applied Physics
- Applied Chemistry
- Basics of Information Technology

5.2 Engineering Sciences

- Engineering Drawing
- Applied Mechanics
- Materials and Metallurgy
- Strength of Material
- Basics of Electrical and Electronics Engineering
- Hydraulics and Pneumatic Systems
- Thermodynamics

5.3 Mechanical Engineering/Technology

- Machine Drawing
- Theory of Machines
- Machine Design and Drawing
- Workshop Technology
- Refrigeration and Air Conditioning
- Tool engineering
- Computer Aided Drafting
- Inspection and Quality Control
- CNC Machines and Automation
- Industrial Engineering
- Workshop Practice
- General Workshop Practice
- Industrial Training
- Project work

5.4 Management Subjects

- Communication Skills
- Employability Skills
- Environmental Education
- Material Procurement and Management
- Entrepreneurship Development and Management

5.5 Student Centred Activities

It includes industrial visits, extension lectures, seminars, library studies, hobby clubs, sports and games and cultural activities.

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.	Basics of Electrical and Electronics Engineering	-	-	5	-	-	-
10.	Workshop Technology	-	-	3	3	3	-
11.	Workshop Practice	-	-	9	9	9	-
12.	Machine Drawing	-	-	6	-	-	-
13.	Materials and Metallurgy	-	-	-	5	-	-
14.	Hydraulics and Pneumatic Systems	-	-	-	5	-	-
15.	Thermodynamics	-	-	6	-	-	-
16.	Strength of Materials	-	-	6	-	-	-
17.	Tool Enggineering	-	-	-	5	-	-
18.	Computer Aided Drafting	-	-	-	-	3	-
19.	Inspection and Quality Control	-	-	-	-	-	6
20.	Theory of Machines	-	-	-	-	4	-
21.	Machine Design and Drawing	-	-	-	8	-	-
22.	Refrigeration and Air Conditioning	-	-	-	-	6	-
23.	Employability Skills	-	-	-	-	2	2
24.	Environmental Education	-	-	-	-	3	-
25.	Industrial Engineering	-	-	-	-	-	4
26.	CNC Machines and Automation	-	-	-	-	5	-
27.	Entrepreneurship Development and Management	-	-	-	-	-	3
28.	Material Procurement and Management	-	-	-	-	-	5
29.	Project Work	-	-	-	-	-	15
30.	Student Centered Activities	3	2	5	5	5	5
	Total	**40**	**40**	**40**	**40**	**40**	**40**