

1. SALIENT FEATURES OF THE DIPLOMA PROGRAMME IN PRODUCTION ENGINEERING

- 1) Name of the Programme : Diploma Programme in Production 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 : 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 PRODUCTION ENGINEERING

After detailed discussions, the workshop group visualized the following major employment opportunities for diploma holders in Production Engineering.

- Manufacturing/process industries in private and public sector.
- As self-employed in Manufacturing and Service Sector.

Though the diploma holders 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 PRODUCTION ENGINEERING

Keeping in min the employment opportunities, a diploma holder in Production Engineering should have following competencies:

1. Knowledge and skill regarding various production processes, tools, jigs and fixtures including the use of high-tech machines (CIM and automatic machines), CNC Machines for increased productivity and quality.
2. Ability to prepare material schedules, equipment schedules, manpower schedules and process schedules.
3. Knowledge and skills regarding various inspecting and measuring instruments to inspect and control the quality of products as per standards.
4. Competencies in carrying out work-study.
5. Understanding about the composition, characteristics, testing, and usage of various types of engineering materials used in the industry.
6. Knowledge and skills in material management.
7. Knowledge about press tools and gauges and their tryout.
8. Knowledge and skills to maintain suitable records of production and services, analyze the causes of wastage and ensure remedial action.
9. Competencies in problem solving related to shop floor.
10. Knowledge and skills in communication, and inter personal relations.
11. Understanding regarding labour management and awareness regarding laws and Acts for their welfare, safety and training.
12. Awareness regarding statutory laws concerning pollution control techniques and related equipment.
13. Awareness regarding facilities and support system to promote entrepreneurship amongst engineers and technicians.
14. Basic knowledge and skills in applied sciences and computers so as to

develop scientific temper, continued learning skills and their applications in technology subjects.

15. Basic knowledge and skills in Engineering Sciences like Material Hydraulics, thermodynamics, electrical and electronics, Engineering Graphics, Applied Mechanics, Strength of Materials which are pre-requisite to understand technology subjects.
16. Competencies in preparing in Mechanical engineering drawings and skills in reading and interpreting Mechanical engineering drawings and electrical, hydraulic, pneumatic circuit diagrams.
17. Competency in the design of simple jigs, fixtures and gauges.
18. Competency in preparing cost estimates.

4. DERIVING CURRICULUM AREAS FROM COMPETENCY PROFILE

Sr. No.	Competency	Curriculum Area
i)	Knowledge and skill regarding various production processes, tools, jigs and fixtures including the use of high-tech machines (CIM and automatic machines), CNC Machines for increased productivity and quality.	<ul style="list-style-type: none"> ▪ Workshop Technology ▪ Workshop Practice ▪ Tool Engineering ▪ CNC Machines and Automation ▪ Computer Aided Manufacturing
ii)	Ability to prepare material schedules, equipment schedules, manpower schedules and process schedules.	<ul style="list-style-type: none"> ▪ Industrial Engineering
iii)	Knowledge and skills regarding various inspecting and measuring instruments to inspect and control the quality of products as per standards.	<ul style="list-style-type: none"> ▪ Inspection and Quality Control
iv)	Competencies in carrying out work-study.	<ul style="list-style-type: none"> ▪ Industrial Engineering
v)	Understanding about the composition, characteristics, testing, and usage of various types of engineering materials used in the industry.	<ul style="list-style-type: none"> ▪ Materials and Metallurgy
vi)	Knowledge and skills in material management.	<ul style="list-style-type: none"> ▪ Entrepreneurship Development and Management
vii)	Knowledge about press tools and gauges and their tryout.	<ul style="list-style-type: none"> ▪ Tool Engineering
viii)	Knowledge and skills to maintain suitable records of production and services, analyze the causes of wastage and ensure remedial action.	<ul style="list-style-type: none"> ▪ Industrial Engineering
ix)	Competencies in problem solving related to shop floor.	<ul style="list-style-type: none"> ▪ Project Work ▪ Employability Skills

x)	Knowledge and skills in communication, and inter personal relations.	<ul style="list-style-type: none"> ▪ Communication Skills ▪ Employability Skills
xi)	Understanding regarding labour management and awareness regarding laws and Acts for their welfare, safety and training.	<ul style="list-style-type: none"> ▪ Entrepreneurship Development and Management
xii)	Awareness regarding statutory laws concerning pollution control techniques and related equipment.	<ul style="list-style-type: none"> ▪ Environmental Education
xiii)	Awareness regarding facilities and support system to promote entrepreneurship amongst engineers and technicians.	<ul style="list-style-type: none"> ▪ Entrepreneurship development and Management
xiv)	Basic knowledge and skills in applied sciences and computers so as to develop scientific temper, continued learning skills and their applications in technology subjects.	<ul style="list-style-type: none"> ▪ Basics of IT ▪ Applied Physics ▪ Applied Chemistry ▪ Applied Mathematics
xv)	Basic knowledge and skills in Engineering Sciences like Material Hydraulics, thermodynamics, electrical and electronics, Engineering Graphics, Applied Mechanics, Strength of Materials which are pre-requisite to understand technology subjects.	<ul style="list-style-type: none"> ▪ Materials and Metallurgy ▪ Hydraulic and Pneumatic Systems ▪ Applied Mechanics ▪ Strength of Materials ▪ Basic Electrical and Electronics Engineering
xvi)	Competencies in preparing in Mechanical engineering drawings and skills in reading and interpreting Mechanical engineering drawings and electrical, hydraulic, pneumatic circuit diagrams.	<ul style="list-style-type: none"> ▪ Engineering Drawing ▪ CAD ▪ Machine Design and Drawing
xvii)	Competency in the design of simple jigs, fixtures and gauges.	<ul style="list-style-type: none"> ▪ Machine Design and Drawing
xviii)	Competency in preparing cost estimates.	<ul style="list-style-type: none"> ▪ Industrial Engineering

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 Materials
- Basics of Electrical and Electronics Engineering
- Hydraulic and Pneumatic Systems
- Thermodynamics

5.3 Core Engineering/Technology

- Machine Drawing
- Theory of Machines
- Machine Design and Drawing
- Workshop Technology
- Tool Engineering
- Computer Aided Drafting
- Computer Aided Manufacturing
- 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
- 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.	Hydraulic and Pneumatic Systems	-	-	-	6	-	-
15.	Thermodynamics	-	-	6	-	-	-
16.	Strength of Materials	-	-	6	-	-	-
17.	Computer Aided Manufacturing	-	-	-	3	-	-
18.	Computer Aided Drafting	-	-	-	-	3	-
19.	Inspection and Quality Control	-	-	-	-	-	6
20.	Theory of Machines	-	-	-	-	4	-
21.	Machine Design and Drawing	-	-	-	8	-	-
22.	Tool Engineering	-	-	-	-	5	5
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.	Project Work	-	-	-	-	-	15
29.	Student Centered Activities	3	2	5	6	6	5
	Total	40	40	40	40	40	40