



MACHINE OPERATOR – CNC LATHE

CURRICULUM/SYLLABUS

This program is aimed at training candidates for the job of a “**Machine Operator – CNC Lathe**”, in the “**Petrochemical**” Sector and by the end of the program aims at building the following key competencies amongst the learner.

Program Name	Machine Operator – CNC Lathe		
Qualification Pack Name & Reference ID.	Machine Operator – CNC Lathe CPC/Q 7003		
Version No.		Version Update Date	
Pre-requisites to Training	Minimum qualification – X th Standard		
Training Outcomes	<p>After completing this programme, participants will be able to:</p> <ul style="list-style-type: none"> • Health & safety Practices at workplace • Basic Fitting, filing and measuring tools & instruments • Basic Arithmetic and Work shop Calculations • Understanding of Engineering Drawings/ sketches and Geometric tolerances • Knowledge of metal cutting, cutting tools and tool material • Perform Lathe machine operations • Knowledge of Work and tool holding devices on lathe/ CNC lathe machine • Job setting and simple programming on CNC lathe machine • Perform machining operations on CNC Lathe machine • Checking the quality of machined components • Daily Maintenance of Lathe / CNC Lathe machine 		

This course encompasses **06** out of **06** Learning Outcomes (LO) of “**Machine Operator – CNC Lathe**” Qualification Document.

S. No.	Topic/ Module	Theory Duration (hh:mm)	Practical Duration (hh:mm)	Key Learning Outcomes	Corresponding LO Code	Equipment Required
1.	Industrial Safety & Practices	8	16	<ul style="list-style-type: none"> • Comply with Environmental & Safety Policies of Organization, Identify personal safety , Job Safety & Machine Safety, Coordinate with other resources at the workplace to achieve the healthy, safe and secure environment for all incorporating all 	CPC/ N 7013	Hand Gloves, Safety Goggles, First Aid Kit, Fire Extinguisher



				government norms esp. for emergency situations like fires, earthquakes etc. identify and correct any hazards like illness, accidents, fires or any other natural calamity safely and within the limits of individual's authority.		
2.	Basic Engineering	22	50	<ul style="list-style-type: none"> • Can able to understand and use basic fitting & filing tools. • Able to use measuring instruments to measure OD, ID, thread, tape etc. • Able to do the basic arithmetic calculations, tapes, r.p.m., weight etc. • Can able to read & interpret and draw simple engineering drawings in orthographic isometric projection. • Can able to understand the Geometrical Tolerances and Precision of Job. 	CPC/ N 7011	Hand tools, Vernier Calliper, micrometer, height gauge, thread gauge etc., Calculator, Log Table, Drawing board, drafter drawing sheet, Drawing , Blue Print
3.	Metal Cutting & Cutting Tools	8	16	<ul style="list-style-type: none"> • Knowledge about basic Metal properties, cutting mechanism, types of cutting tools, application & selection, cutting fluid, machining parameters 	CPC/ N 7011	Tools
4.	Conventional Lathe Machines	54	90	<ul style="list-style-type: none"> • Can understand the different parts of Lathe Machine Tools, Can operate & Control the Different types of Lathe Machine; understand work & tool holding devices Can know how to operate and control machining operations related to lathe machine such as Plain turning, Step Turning, Taper Turning, Form Turning drilling, Reaming, boring, sawing, cutting or Parting-Off , 	CPC/ N 7011	Lathe Machine, 3-Jaw & 4-Jaw Chuck, Cutting Tools (Single Point) Both HSS & Carbide Inserts types,



				Grooving ,knurling, Eccentric Turning, Facing & Threading Operations. Measuring and checking the Quality of work.		
5.	CNC Lathe Machine	36	108	<ul style="list-style-type: none"> Working Principle, G & M Codes, Machine Axes, Absolute & incremental system Can operate & Programme a CNC Lathe Machine Tools. Can perform Job on CNC Lathe Machines. Can programme & operate on different types of CNC Lathe Controller like Fanuc, HASS etc. 	CPC/ N 7012	CNC Lathe machine, Milling, Different Type CNC Controller Like HASS, FANUC, Heidenhain, CNC Lathe Machine with Different Type CNC Controller Like HASS, FANUC, Heidenhain , CNC HASS Simulators etc
6.	Work effectively with Others	8	16	<ul style="list-style-type: none"> Can report & Read the Problem & Can communicate to other team members. Can Interact & communicate effectively with colleagues including member in the own group as well as other groups 	CPC/ N 7014	
7.	Basics of computer and data entry	4	20	<ul style="list-style-type: none"> Basics of computers, Computer terminology, Office Software for report preparation and excel data sheet. 	CPC/ N 7015	Computer, Software, Internet, Training Manual
8.	Soft Skills	4	20	<ul style="list-style-type: none"> Effective Verbal Communication, understanding the verbal instructions, reading of instructions/ procedures and writing of reports. General behavioral etiquettes 	CPC/ N 7016	
Total Hours		144	336			

Total Programme Duration: **480 Hours**