

**GUJARAT COUNCIL OF VOCATIONAL TRAINING**  
GANDHINAGAR

C/67

1. Name of Course : CNC Operator (Turning)

N.C.O. No. Skills Covered  
( Please refer National Classification of Occupations-2004 available on [www.dget.nic.in](http://www.dget.nic.in))


2. Engineering OR Non-Engineering : Engineering
3. No.of students per batch : 10
4. Duration in hours /Month : 4 Week  
+ 5hrs Soft Skill
5. Duration in Day : @ 4 Hours/ Day
6. Examination Scheme :

No.	Name of Subject	Teaching Hours during full course.	Maximum Marks. (Excluding Sessional)	Minimum Marks required for Passing (Excluding Sessional)	Sessional Marks if any
Subject-1	Trade Theory	20	50	20	10
Subject-2	Practical	60	150	90	50

6. Entry Qualification for Trainee :

Minimum entry qualification (Essential):	S.S.C. Pass with 1 year suitable field Exp.
Desirable :	ITI P&M(BBBT), TR, MH, FT,GM Trades or DME/BE in Mechanical, Prod. Engg.

6. Minimum Qualification for Trainer :


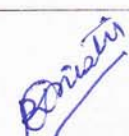

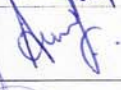


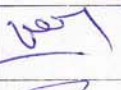


Minimum entry qualification (Essential):	DME with 1-year experience in CNC Filed <b>(Special in programming)</b>
Desirable :	B.E. Mechanical or Production



**GUJARAT COUNCIL OF VOCATIONAL TRAINING**  
GANDHINAGAR

C/69

7. Syllabus Committee Members :

Sr. No.	Name	Organization	Designation	Technical Qualification	Experience in Years	Signature
1	Shri Kamlesh Gandhi	Jyoti CNC automation pvt. Metoda Rajkot.	G M M/C Shop.	B.E. Mech. Engg.	20	
2	Shri Pranav Mistri	Jyoti CNC automation pvt. Metoda Rajkot.	Senior Engineer	B.E. Mech. Engg	05	
3	Shri N.K.Paneri	Fine Wirecut Rajkot	Director	DAE / DEE	30	
4	Shri A.A.Borania	J-Cam Engg. Corp. Rajkot	Director	DME	20	
5	Shri Jay Mavani	Mavani Industries	Director	DME	20	
6	Shri S.A.Pandav	DE&T Gandhinagar	RDD Rajkot	BE Civil	28	
7	Shri P.L.Raval	DE&T Gandhinagar	Principal ITI Rajkot	DTM	30	
8	Shri R.M.Varu	DE&T Gandhinagar	Tech. Officer	DAE	28	
9	Shri K.R.Borania	ITI Rajkot	SI CNC	DME / DTE	26	

8. Terminal Skills of Trainee : (Should be well defined and having reference to NCO)

The trainee, after successful completion of training, will have following skill...

- 1 Development in CNC technology
- 2 How to utilize CNC m/c in a Best way
- 3 Work and Tool setting
- 4 CNC Turning Operating
- 5 Soft Skill –How to Face Interview & Personality Development



C/71

**GUJARAT COUNCIL OF VOCATIONAL TRAINING**  
GANDHINAGAR

9. Approximate cost of Tools / Equipments / Machinery for starting one batch of the course:

10. Area required Practical / Workshop for one batch :

11. Minimum Power connection required :

14.1 No. of items in Standard list of Machinery :   
14.1.1 Page No. form..... to .....

14.2 No. of items in Standard list of Shop Outfit :   
14.2.1 Page No. form..... to .....

\*\*\*\*\* For official use \*\*\*\*\*

Approved by GCVT ~~in Governing Body meeting~~  on:

Syllabus implemented w.e.f. admission session :

Revision History (1) Revision No.....Revision Date  
(2) Revision No.....Revision Date  
(3) Revision No.....Revision Date

Ref. : Syllabus nearer to MES code : MAN307 on page no. 14



973

**GUJARAT COUNCIL OF VOCATIONAL TRAINING**  
GANDHINAGAR

Standard List of Machinery-Equipment & Shop-outfit for

Trade:- CNC Operator (Turning)

**Syllabus For CNC Operator (Turning).**

NAME : **CNC Operator (Turning)**

SECTOR : **ENGINEERING**

TERMINAL COMPETANCY : The successful candidates should be able to....

Identify CNC Turning Centre Machine Elements & CNC control panel keys and Menu structure.

Start the CNC Machine and Reference it and move the Machine Slides (Axes) in JOG/INC/MPG Modes.

Start Spindle ON/OFF, Coolant On/Off, Tool Changing and do axes positioning in JOG/MDI Modes.

Load Parts in Work holding devices and Tools in tools Turret.

Input/edit Part Programs in the CNC Control and do Graphic Simulation to Verify & Check Part Programs. Only can edit basic changes in part programs.

Do Machining operations like Turning, Facing, Contour Turning with Roughing/Finish Turning using Stock Removal Cycles, Sub programming. Given by the programmer.

<b>Underpinning Knowledge (Theory)</b>	<b>Practical Competencies</b>
Safety Precautions	Demo on Personal and Industrial Safety.
Development in CNC technology Explain working principle of CNC Machine	Study of CNC machine, key board & specifications.
Parts of a CNC turning machine	Demonstrate Machine starting & operating in Reference Point, JOG, and Incremental Modes
Application of CNC turning machine Advantages & Disadvantages of CNC M/C.	Carryout Absolute and incremental programming assignments and simulations.
Salient features of CNC turning	Demonstration of machine over travel limits and emergency stop.
M/C How to utilize CNC M/c in a Best way	Demonstrate Work and tool setting.
	Carryout Part program preparation, Simulation & Automatic Mode Execution



# GUJARAT COUNCIL OF VOCATIONAL TRAINING GANDHINAGAR

175

<p>Comparison between conventional M/C &amp; CNC M/C</p> <p>Basic G Codes &amp; M Codes for CNC Turning programming. (Function &amp; Application)</p> <p style="text-align: center;">Fundamentals of CNC Turning</p> <p>Basic CNC Turning Programming concepts</p> <p>CNC turning Tooling and its uses.</p> <p>Selection of cutting speed, Feed &amp; Depth of cut for CNC M/C Basic introduction.</p> <p>Basic Trouble shooting in CNC Turning.</p> <p>Reading of part drawing, dimensional &amp; geometrical accuracy.</p> <p>Introduction &amp; application of basic measuring instrument.</p> <p>Machine operating documentation .</p> <p>Daily maintenance of m/c.</p>	<p>for the exercise on Simple turning &amp; Facing (step turning)</p> <p>Carryout Linear interpolation, and Circular interpolation assignments and simulations on soft ware.</p> <p>Carryout Work off set measurement, Tool off set measurement and entry in CNC Control.</p> <p>Carryout Part program preparation, Simulation &amp; Automatic Mode Execution for the exercise on Turning with Radius / chamfer with TNRC</p> <p>Demonstrate Tool change in CNC turning &amp; MPG mode operation.</p> <p>Carryout Geometry Wear Correction.</p> <p>Practical on stock removal cycle OD Given by programmer</p> <p>Practical on Drilling / boring cycles Given by programmer</p> <p>Practical on Stock removal cycle ID Given by programmer</p> <p>Carryout Machining of Part program exercises of CNC TURNING Given by programmer</p> <p>Measurement of finish and semi finish component.</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



*(Signature)*

*(Signature)*