



## Precision Machining & Computer Aided Technology

**Available Certifications:**

NIMS CNC Milling: Programming Setup & Operations  
 NIMS Machining Level 1  
 NIMS Machining Level 1 CNC Turning  
 NIMS Machining Level 1 Manual Milling  
 NIMS Machining Level 1 Manual Turning Between Centers  
 NIMS Machining Level 1 Planning, Benchmark, Layout  
 NIMS Machining Level 1 Manual Measurement, Materials, and Safety

NIMS CNC Turning: Programming Setup & Operations  
 NIMS Machining Level 1 CNC Milling  
 NIMS Machining Level 1 Manual Drill Press Operations  
 NIMS Machining Level 1 Manual Surface Grinding  
 NIMS Machining Level 1 Manual Turning with Chucking  
 OSHA Certification NIMS Machining Level 2

**Complete Task List:**

Task Number	Description	Hours	Level
<i>*Local Task List</i>			
VA100	ORIENTATION / SAFETY		
VA101	Describe the Occupational Safety and Health Administration (OSHA) and its role in the machining industry.		
VA102	RESERVED		
VA103	Apply general safety procedures.		
VA104	RESERVED		
VA105	RESERVED		
VA106	Review Safety Data Sheets (SDS).		
VA107	RESERVED		
VA200	PERFORMING LAYOUT WORK		
VA201	Perform layout work.		
VA202	RESERVED		
VA203	Employ basic and precision layout tools.		
VA300	PART INSPECTION		
VA301	Employ precision measuring instruments.		
VA302	Calibrate precision measuring instruments.		
VA303	Conduct quality control procedures.		
VA400	BENCH WORK		
VA401	Apply bench work safety procedures.		
VA402	Cut material with a hand hacksaw.		
VA403	File work to specifications.		
VA404	Cut threads with hand taps and dies.		
VA405	RESERVED		
VA406	Use hand tools.		
VA407	Use a hand arbor and/or hydraulic press.		
VA500	DRILL PRESSES		
VA501	Apply drill press safety procedures.		
VA502	Operate drill press work holding devices.		
VA503	RESERVED		
VA504	RESERVED		
VA505	Select correct drill sizes for drill press application.		
VA506	RESERVED		
VA507	Demonstrate counterboring, spotfacing and countersinking.		
VA508	RESERVED		
VA509	RESERVED		

<b>Task Number</b>	<b>Description</b>	<b>Hours</b>	<b>Level</b>
VA510	RESERVED		
VA511	RESERVED		
VA600	GRINDING MACHINES		
VA601	Apply pedestal and surface grinding safety procedures.		
VA602	Identify parts of pedestal grinder.		
VA603	Test, mount and dress grinding wheels.		
VA604	Grind and sharpen tools.		
VA605	RESERVED		
VA606	RESERVED		
VA607	RESERVED		
VA608	Identify parts of surface grinder.		
VA609	Grind surfaces flat and parallel using a magnetic chuck.		
VA610	Grind work surfaces square with a vise or angle plate.		
VA611	Grind precision angles using a sine plate or sine bar.		
VA700	LATHES		
VA701	Apply lathe safety procedures.		
VA702	Mount and indicate work piece in 3-jaw and 4-jaw chucks.		
VA703	Align centers.		
VA704	Face workpiece.		
VA705	RESERVED		
VA706	Turn inside and outside diameters to shoulders.		
VA707	Turn tapers.		
VA708	Demonstrate knurling.		
VA709	Part off and groove workpiece.		
VA710	Cut internal and external threads.		
VA711	RESERVED		
VA712	File and polish workpiece.		
VA713	RESERVED		
VA714	Perform boring operations.		
VA715	Install and remove tool holders.		
VA716	Use a collet attachment.		
VA717	RESERVED		
VA718	RESERVED		
VA719	Select gears for lathe operations.		
VA800	MILLING MACHINES		
VA801	Apply milling machine safety procedures.		
VA802	Tram a milling head.		
VA803	Mount and indicate vise.		
VA804	Mill angles.		
VA805	Mill keyways.		
VA806	RESERVED		

<b>Task Number</b>	<b>Description</b>	<b>Hours</b>	<b>Level</b>
VA807	RESERVED		
VA808	RESERVED		
VA809	Use an edge finder.		
VA810	Differentiate between climb milling and conventional milling.		
VA811	Use an adjustable boring head.		
VA812	RESERVED		
VA813	Install and remove cutting tool holders.		
VA814	Select cutter for milling operations.		
VA815	Square part.		
VA900	POWER SAW		
VA901	Apply power saw safety procedures.		
VA902	RESERVED		
VA903	RESERVED		
VA904	Follow the 3 tooth rule.		
VA905	Saw work piece.		
VA906	RESERVED		
VA1000	MACHINES AND TOOLS		
VA1001	Lubricate and maintain machinery.		
VA1002	Clean and store equipment.		
VA1003	Inspect machine guards.		
VA1004	RESERVED		
VA1005	RESERVED		
VA1100	METALLURGY		
VA1101	Identify metals classifications.		
VA1102	Identify metal property applications.		
VA1103	Identify heat-treating and annealing processes.		
VA1200	CHARTS AND REFERENCES		
VA1201	Use the decimal equivalent chart.		
VA1202	Calculate speeds and feeds.		
VA1203	Use tap and drill charts.		
VA1204	Use Machinery Handbook and/or shop references to locate information.		
VA1300	BLUEPRINT READING		
VA1301	Identify orthographic views and projections.		
VA1302	RESERVED		
VA1303	Identify the alphabet of lines and symbols.		
VA1304	RESERVED		
VA1305	Calculate material sizes.		
VA1306	Differentiate angle projections.		
VA1307	RESERVED		
VA1308	Interpret title block information.		
VA1400	CNC PROGRAMMING		

<b>Task Number</b>	<b>Description</b>	<b>Hours</b>	<b>Level</b>
VA1401	Apply CNC safety procedures.		
VA1402	Use G and M codes.		
VA1403	RESERVED		
VA1404	Use of Cartesian coordinate systems.		
VA1405	RESERVED		
VA1406	Prove a CNC program.		
VA1407	RESERVED		
VA1408	RESERVED		
VA1409	Set part zero and tool offsets.		
VA1410	Transfer data files to and from a CNC machine.		
VA1411	use CNC control functions.		
VA1412	RESERVED		
VA3513	13.2.11.A- Apply effective speaking and listening skills used in a job interview.		
VA3514	13.2.11.B- Apply research skills in searching for a job. (CareerLink, O-NET, Networking, Newspapers, Professional Associations, Reource Books (OOH), etc.		
VA3515	13.2.11.C-Develop and assemble, for career portfolio placement, career acquisition documents, such as, but not limited to: job application, letter of appreciation, Cover Letter, Resume, Post-Secondary Application, etc.		
VA3516	13.2.11.E- Demonstrate, in the career acquisition process, the application of essential workplace skills/knowledge, such as, but not limited to: Communication, Health and Safety, Resilience, Integrity, Problem Solving, Teamwork and Communication.		
VA3517	13.3.11.A- Evaluate personal attitudes and work habits that support career retention and advancement, with focus on Resilience, Integrity, Problem Solving, Communication, Teamwork.		
VA3518	13.3.11.B-Evaluate team member roles and describe and illustrate active listening techniques: clarifying, encouraging, reflecting, restating, and summarizing.		
VA3519	13.3.11.C- Evaluate conflict resolution skills as they related to the workplace.: constructive criticism, group dynamics, managing leaderships, mediation, negotiation, problem solving.		
VA3520	13.3.11.D- Develop a personal budget based on career choice, such as but not limited to : fixed/variable expenses, gross pay, net pay, saving, taxes.		