Apprenticeship Manitoba

Computer Numerical Control (CNC) Machinist POA (2004)
Subtask to Unit Comparison

NOA Subtask		Manitoba Unit(s)
Task 1– Participates in workplace health and safety practices.		
1.01	Maintains a safe workplace environment.	A1 Orientation: Structure and Scope of the Trade and Workplace Environments
1.02	Uses safety gear and protective equipment.	A1 Orientation: Structure and Scope of the Trade and Workplace Environments
1.03	Follows safety/health Acts and regulations	A1 Orientation: Structure and Scope of the Trade and Workplace Environments
Task 2 – Performs general machine maintenance.		
2.01	Checks fluids.	A1 Orientation: Structure and Scope of the Trade and Workplace Environments
2.02	Verifies machine calibration.	A1 Orientation: Structure and Scope of the Trade and Workplace Environments
		D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
2.03	Completes documentation records.	A1 Orientation: Structure and Scope of the Trade and Workplace Environments
Task 3 – Applies ergonomics.		
3.01	Organizes an ergonomic workstation.	A1 Orientation: Structure and Scope of the Trade and Workplace Environments
3.02	Develops ergonomic work procedures.	A1 Orientation: Structure and Scope of the Trade and Workplace Environments
Task 4 – Trains personnel.		
4.01	Conducts orientation for workers.	A1 Orientation: Structure and Scope of the Trade and Workplace Environments
4.02	Provides direction and guidance for workers.	A1 Orientation: Structure and Scope of the Trade and Workplace Environments
4.03	Supervises and monitors workers.	A1 Orientation: Structure and Scope of the Trade and Workplace Environments
Task 5 – Demonstrates basic programming computer skills.		
5.01	Uses a computer.	A2 Computer Storage Architecture and Requirements of Unique Programs and Manufacturing Processes
		C3 Solid Edge (Theory)
		C4 Solid Edge (Practical)
5.02	Reads and interprets machine code files.	A2 Computer Storage Architecture and Requirements of Unique Programs and Manufacturing Processes
		B3 Production Methods
		C3 Solid Edge (Theory)
		C4 Solid Edge (Practical)
Task 6 – Develops planning.		
6.01	Creates set up sheets and operational instructions.	A2 Computer Storage Architecture and Requirements of Unique Programs and Manufacturing Processes
		B1 Planning

NOA Subtask		Manitoba Unit(s)
6.02	Applies ergonomics.	B1 Planning
6.0 3	Uses CAD files.	B1 Planning
6.04	Determines production method.	A2 Computer Storage Architecture and Requirements of Unique Programs and Manufacturing Processes
		B1 Planning
6.05	Identifies process improvements.	A2 Computer Storage Architecture and Requirements of Unique Programs and Manufacturing Processes
		B1 Planning
Task 7 – Creates CAM files.		
7.01	Generates a CAM file.	C1 CAD/CAM Processes (Theory)
		C2 CAD/CAM Processes (Practical)
7.02	Transfers CAD/CAM file.	C1 CAD/CAM Processes (Theory)
		C2 CAD/CAM Processes (Practical)
Task 8 – Uses Electrical Industries Association (EIA) program language.		
8.01	Selects tool paths.	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
		D4 CNC Mill (Practical)
8.02	Determines speeds and feeds.	B2 Tooling
		D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
8.03	Writes Electrical Industries Association (EIA) programs.	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
8.04	Writes macros.	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
8.05	Executes macros.	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
8.06	Verifies program.	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
Task 9 – Determines axis(s).		
9.01	Applies a Cartesian coordinate system.	A5 Drill Presses and Accessories
		B3 Production Methods
		D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
9.02	Determines machining planes.	A5 Drill Presses and Accessories
		B3 Production Methods
		D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
9.03	Integrates live tooling.	A5 Drill Presses and Accessories
		B3 Production Methods
		D1 CNC Lathe (Theory)

NOA Subtask		Manitoba Unit(s)
		D2 CNC Lathe (Practical)
Task 10 – Sets up CNC Lathe.		
10.01	Selects program.	B3 Production Methods
		D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
10.02	Selects tool holders and cutters.	B2 Tooling
		B3 Production Methods
		D2 CNC Lathe (Practical)
10.03	Selects work holding devices.	B3 Production Methods
		D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
10.04	Establishes tool lengths and diameters.	B3 Production Methods
		D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
10.05	Establishes workpiece offsets.	B3 Production Methods
		D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
10.06	Adjusts tool offsets.	B3 Production Methods
		D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
10.07	Selects accessories.	B3 Production Methods
		D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
10.08	Selects electronic probing systems.	B3 Production Methods
		D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
10.09	Prove out program.	B3 Production Methods
		D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
Task 11 – Initiates operations.		
11.01	Operates manually.	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
11.02	Initiates Manual Data Input (MDI).	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
11.03	Prove out program.	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
11.04	Performs editing activities.	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
11.05	Establishes process stability.	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
Task 12 – Maintains CNC lathe.		
12.01	Implements tool management.	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
12.02	Performs general preventative machine maintenance.	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
12.03	Troubleshoots CNC lathe.	D1 CNC Lathe (Theory)
		D2 CNC Lathe (Practical)
Task 13 – Sets up CNC mill.		
13.01	Selects program.	B3 Production Methods
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
13.02	Selects tool holders and cutters.	B2 Tooling
		B3 Production Methods

NOA Subtask		Manitoba Unit(s)
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
13.03	Establishes tool lengths and diameters.	B3 Production Methods
		D3 CNC Mill (Theory)
13.04	Selects work holding devices.	B3 Production Methods
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
13.05	Establishes fixture offsets.	B3 Production Methods
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
13.06	Selects accessories.	B3 Production Methods
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
Task 14 – Initiates operations.		
14.01	Operates manually.	D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
14.02	Initiate Manual Data Input (MDI).	D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
14.03	Prove out program.	D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
14.04	Performs editing activities.	D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
14.05	Establishes process stability.	D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
Task 15 – Maintains CNC mill.		
15.01	Implements tool management.	I1 Milling Operations I
		I2 Milling Operations II
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
15.02	Performs general preventative machine maintenance.	I1 Milling Operations I
		I2 Milling Operations II
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
15.03	Troubleshoots CNC mill.	I1 Milling Operations I
		I2 Milling Operations II
		D3 CNC Mill (Theory)
		D4 CNC Mill (Practical)
Task 16– Sets up Electrical Discharge Machining (EDM).		
16.01	Selects program.	D5 CNC Electrical Discharge Machining (EDM)
16.02	Selects electrode material, wire type and material type.	D5 CNC Electrical Discharge Machining (EDM)
16.03	Selects flushing devices.	D5 CNC Electrical Discharge Machining (EDM)
16.04	Selects work holding devices.	D5 CNC Electrical Discharge Machining (EDM)
16.05	Establishes electrode lengths and wire sizes.	D5 CNC Electrical Discharge Machining (EDM)
16.06	Establishes fixture offsets.	D5 CNC Electrical Discharge Machining (EDM)
16.07	Establishes electrode or wire offsets.	D5 CNC Electrical Discharge Machining (EDM)
16.08	Adjust electrode or wire offsets.	D5 CNC Electrical Discharge Machining (EDM)
16.09	Selects accessories.	D5 CNC Electrical Discharge Machining (EDM)
Task 17– Initiates operations.		
17.01	Operates manually.	D5 CNC Electrical Discharge Machining (EDM)
17.02	Initiates Manual Data Input (MDI)	D5 CNC Electrical Discharge Machining (EDM)
17.03	Prove out program.	D5 CNC Electrical Discharge Machining (EDM)

NOA Subtask		Manitoba Unit(s)
17.04	Performs editing activities.	D5 CNC Electrical Discharge Machining (EDM)
Task 18– Maintains Electrical Discharge Machining (EDM).		
18.01	Implements tool management.	D5 CNC Electrical Discharge Machining (EDM)
18.02	Performs general preventative machine maintenance.	D5 CNC Electrical Discharge Machining (EDM)
18.03	Troubleshoots Electrical Discharge Machining (EDM).	D5 CNC Electrical Discharge Machining (EDM)
Task 19– Sets up CNC Grinder.		
19.01	Selects program.	D6 CNC Grinder
19.02	Matches grinding wheel material to workpiece material.	D6 CNC Grinder
19.03	Selects work holding devices.	D6 CNC Grinder
19.04	Establishes workpiece offsets.	D6 CNC Grinder
19.05	Establishes wheel offsets.	D6 CNC Grinder
19.06	Selects accessories.	D6 CNC Grinder
Task 20 – Initiates operations.		
20.01	Operates manually.	D6 CNC Grinder
20.02	Initiates manual Data Input (MDI).	D6 CNC Grinder
20.03	Prove out program.	D6 CNC Grinder
Task 21 – Maintains CNC grinder.		
21.01	Implements grinding wheel and work holder devices management.	D6 CNC Grinder
21.02	Performs general preventative machine maintenance.	D6 CNC Grinder
21.03	Troubleshoots CNC grinder.	D6 CNC Grinder