

## Tool and Die Maker RSOS (2019) Subtask-to-Unit Comparison

RSOS Subtask		Manitoba Unit(s)
<b>Task 1 - Performs safety-related functions.</b>		
1.01	Maintains safe work environment.	A1 Trade Safety Awareness, A2 Safety A13 Introduction to Welding B12 Introduction to Grinding Machines B13 Computer Numerical Control (CNC) I Machine – Tools C6 Basic Die Making (Theory) C7 Basic Die Making (Practical)
1.02	Uses personal protective equipment (PPE) and safety equipment.	A1 Trade Safety Awareness, A2 Safety A13 Introduction to Welding B12 Introduction to Grinding Machines B13 Computer Numerical Control (CNC) I Machine – Tools C6 Basic Die Making (Theory) C7 Basic Die Making (Practical)
1.03	Uses hoisting, lifting, rigging and supporting equipment.	A1 Trade Safety Awareness, A2 Safety A5 Hoisting, Lifting and Rigging A13 Introduction to Welding B12 Introduction to Grinding Machines B13 Computer Numerical Control (CNC) I Machine – Tools C6 Basic Die Making (Theory) C7 Basic Die Making (Practical)
<b>Task 2 - Maintains machine-tools, accessories and cutting tools.</b>		
2.01	Maintains machine-tools and accessories.	A8 Hand and Power Tools
2.02	Maintains cutting tools.	A8 Hand and Power Tools B7 Cutting Machine Tools
<b>Task 3 - Organizes work.</b>		
3.01	Interprets drawings, specifications and applications.	A3 Learning About Work A6 Basic Drawings A11 Basic Layout B1 Advanced Drawings
3.02	Plans project activities.	A3 Learning About Work A6 Basic Drawings A11 Basic Layout B1 Advanced Drawings C1 Basic Tool Design
<b>Task 4 - Performs benchwork.</b>		
4.01	Performs layout.	A11 Basic Layout B2 Mechanical Components C1 Basic Tool Design
4.02	Finishes workpiece.	A11 Basic Layout B2 Mechanical Components C1 Basic Tool Design
4.03	Inspects workpiece.	A11 Basic Layout B2 Mechanical Components C1 Basic Tool Design
<b>Task 5 - Uses communication and mentoring techniques.</b>		

<b>RSOS Subtask</b>		<b>Manitoba Unit(s)</b>
5.01	Uses communication techniques.	A1 Trade Safety Awareness A2 Safety A3 Learning About Work B1 Advanced Drawings
5.02	Uses mentoring techniques.	A1 Trade Safety Awareness A2 Safety A3 Learning About Work B1 Advanced Drawings C7 Basic Die Making (Practical) D11 Journeyperson Trainer
<b>Task 6 - Operates power saws.</b>		
6.01	Sets up power saws.	A9 Hand and Power Tools B5 Power Saws
6.02	Saws straight and angle cuts.	A8 Hand and Power Tools B5 Power Saws B6 Contour Band Saws B7 Cutting Machine Tools
6.03	Cuts irregular shapes.	A8 Hand and Power Tools B5 Power Saws B6 Contour Band Saws B7 Cutting Machine Tools
<b>Task 7 - Operates drill presses.</b>		
7.01	Sets up drill presses.	A8 Hand and Power Tools A9 Drills and Drill Presses
7.02	Drills holes using a drill press.	A8 Hand and Power Tools A9 Drills and Drill Presses
7.03	Cuts countersinks, counterbores, chamfers and spot faces using a drill press.	A8 Hand and Power Tools A9 Drills and Drill Presses
7.04	Performs tapping using a drill press.	A8 Hand and Power Tools A9 Drills and Drill Presses B7 Cutting Machine Tools
7.05	Finishes holes using a drill press.	A8 Hand and Power Tools A9 Drills and Drill Presses
<b>Task 8 - Operates conventional lathes.</b>		
8.01	Sets up conventional lathes.	A13 Introduction to Conventional Lathes A14 Basic Conventional Lathe Operation B9 Advanced Conventional Lathe Operation
8.02	Faces surface using a conventional lathe.	A13 Introduction to Conventional Lathes A14 Basic Conventional Lathe Operation B9 Advanced Conventional Lathe Operation
8.03	Turns internal and external surfaces using conventional lathes.	A13 Introduction to Conventional Lathes A14 Basic Conventional Lathe Operation B9 Advanced Conventional Lathe Operation
8.04	Creates holes using conventional lathes.	A13 Introduction to Conventional Lathes A14 Basic Conventional Lathe Operation B9 Advanced Conventional Lathe Operation
<b>Task 9 - Operates conventional milling machines.</b>		
9.01	Sets up conventional milling machines.	A16 Introduction to Milling Machines B11 Conventional Milling Machine Operation
9.02	Mills surfaces using conventional milling machines.	A16 Introduction to Milling Machines B11 Conventional Milling Machine Operation
9.03	Creates holes and hole features using conventional milling machines.	A16 Introduction to Milling Machines B11 Conventional Milling Machine Operation
<b>Task 10 - Operates grinding machines.</b>		

<b>RSOS Subtask</b>		<b>Manitoba Unit(s)</b>
10.01	Sets up grinding machines.	B12 Introduction to Grinding Machines C5 Grinding Operations I D6 Grinding Operations II
10.02	Grinds flat surfaces using a surface grinder.	B12 Introduction to Grinding Machines C5 Grinding Operations I D6 Grinding Operations II
10.03	Grinds profiles.	B12 Introduction to Grinding Machines C5 Grinding Operations I D6 Grinding Operations II
10.04	Grinds internal and external cylindrical and tapered surfaces.	B12 Introduction to Grinding Machines C5 Grinding Operations I D6 Grinding Operations II
10.05	Grinds tools and cutters.	B7 Cutting Machine Tools B12 Introduction to Grinding Machines C5 Grinding Operations I D6 Grinding Operations II
10.06	Finishes holes using a honing machine.	B7 Cutting Machine Tools B12 Introduction to Grinding Machines C5 Grinding Operations I D6 Grinding Operations II
<b>Task 11 - Operates computer numerical control (CNC) machines.</b>		
11.01	Performs CNC programming.	B13 Computer Numerical Control (CNC) Machine I – Tools C8 Computer Numerical Control (CNC) II – Program Code D5 Computer Numerical Control (CNC) III – Operation
11.02	Inputs program data into control memory.	B13 Computer Numerical Control (CNC) Machine I – Tools C8 Computer Numerical Control (CNC) II – Program Code D5 Computer Numerical Control (CNC) III – Operation
11.03	Establishes workpiece datum.	B13 Computer Numerical Control (CNC) Machine I – Tools C8 Computer Numerical Control (CNC) II – Program Code D5 Computer Numerical Control (CNC) III – Operation
11.04	Verifies program.	B13 Computer Numerical Control (CNC) Machine I – Tools C8 Computer Numerical Control (CNC) II – Program Code D5 Computer Numerical Control (CNC) III – Operation
11.05	Monitors machining processes*.	B13 Computer Numerical Control (CNC) Machine I – Tools C8 Computer Numerical Control (CNC) II – Program Code D5 Computer Numerical Control (CNC) III – Operation
<b>Task 12 - Operates electrical discharge machines (EDM).</b>		
12.01	Determines flushing methods.	A7 Fluids and Coolants
12.02	Sets cutting conditions.	B13 Computer Numerical Control (CNC) Machine I – Tools C8 Computer Numerical Control (CNC) II – Program Code D5 Computer Numerical Control (CNC) III – Operation
<b>Task 13 - Heat treats materials.</b>		
13.01	Selects heat treating processes.	B3 Heat Treatment
13.02	Hardens materials.	B3 Heat Treatment
13.03	Tempers materials.	B3 Heat Treatment
13.04	Anneals materials.	B3 Heat Treatment
13.05	Normalizes materials.	B3 Heat Treatment
13.06	Case hardens materials.	B3 Heat Treatment
<b>Task 14 - Tests heat treated materials.</b>		
14.01	Performs visual inspection.	B3 Heat Treatment
14.02	Performs hardness test.	B3 Heat Treatment
<b>Task 15 - Performs production tool design.</b>		
15.01	Identifies production tool requirements.	B8 Precision Measurement II B1 Advanced Drawings C6 Basic Die Making (Theory)

RSOS Subtask		Manitoba Unit(s)
		C7 Basic Die Making (Practical)
15.02	Prepares shop sketches.	B8 Precision Measurement II B1 Advanced Drawings C6 Basic Die Making (Theory) C7 Basic Die Making (Practical)
15.03	Determines production tool material specifications and engineered components.	B8 Precision Measurement II B1 Advanced Drawings C6 Basic Die Making (Theory) C7 Basic Die Making (Practical)
15.04	Prepares information for designing or drafting.	B8 Precision Measurement II B1 Advanced Drawings C6 Basic Die Making (Theory) C7 Basic Die Making (Practical)
<b>Task 16 - Develops prototype.</b>		
16.01	Selects prototyping technique and materials.	B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
16.02	Fabricates prototype components.	B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
16.03	Assembles prototype components.	B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
16.04	Inspects prototypes.	B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
16.05	Proves out prototypes.	B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
<b>Task 17 - Fits and assembles production tools.</b>		
17.01	Verifies dimensions of production tool components.	B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
17.02	Performs production tool assembly.	B8 Precision Measurement II

RSOS Subtask		Manitoba Unit(s)
		C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
17.03	Sets production tool timing.	C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
<b>Task 18 - Proves out production tools.</b>		
18.01	Sets up production tools.	A11 Precision Measurement I B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D1 Geometric Dimensioning and Tolerancing D4 The Coordinate Measuring System D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
18.02	Verifies production part material.	A11 Precision Measurement I B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D1 Geometric Dimensioning and Tolerancing D4 The Coordinate Measuring System D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
18.03	Develops blank/strip.	A11 Precision Measurement I B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D1 Geometric Dimensioning and Tolerancing D4 The Coordinate Measuring System D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
18.04	Cycles equipment with production tools.	A11 Precision Measurement I B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D1 Geometric Dimensioning and Tolerancing D4 The Coordinate Measuring System D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
18.05	Evaluates production part.	A11 Precision Measurement I B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D1 Geometric Dimensioning and Tolerancing D4 The Coordinate Measuring System D7 Advanced Die Making (Theory)

RSOS Subtask		Manitoba Unit(s)
		D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
18.06	Checks production tool for damage.	A11 Precision Measurement I B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D1 Geometric Dimensioning and Tolerancing D4 The Coordinate Measuring System D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
18.07	Modifies production tools to enhance productivity.	A11 Precision Measurement I B8 Precision Measurement II C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D1 Geometric Dimensioning and Tolerancing D4 The Coordinate Measuring System D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
<b>Task 19 - Repairs and maintains production tools.</b>		
19.01	Identifies condition of production tools.	A9 Hand and Power Tools B7 Cutting Machine Tools C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D1 Geometric Dimensioning and Tolerancing D4 The Coordinate Measuring System D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
19.02	Identifies repair procedures.	A9 Hand and Power Tools B7 Cutting Machine Tools C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D1 Geometric Dimensioning and Tolerancing D4 The Coordinate Measuring System D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
19.03	Adjust production tool components.	A9 Hand and Power Tools B7 Cutting Machine Tools C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D1 Geometric Dimensioning and Tolerancing D4 The Coordinate Measuring System D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)
19.04	Reconditions production tool components.	A9 Hand and Power Tools B7 Cutting Machine Tools C6 Basic Die Making (Theory) C7 Basic Die Making (Practical) D1 Geometric Dimensioning and Tolerancing

	RSOS Subtask	Manitoba Unit(s)
		D4 The Coordinate Measuring System D7 Advanced Die Making (Theory) D8 Advanced Die Making (Practical) D9 Jigs and Fixtures (Theory) D10 Jigs and Fixtures (Practical)



Rev. 10/2019