Kentucky CTE

Advanced Manufacturing: Industrial Maintenance Technology: Fundamentals of Machine Tools – A (For Maintenance) 470313 (2026–2027)

Practice and perform safe shop procedures at all times. 1	1 Practice and perform safe shop procedures at all times. 1
Apply the technical math required for employment opportunities in maintenance. 2	2 Apply the technical math required for employment opportunities in maintenance. 2
Perform all duties with emphasis on integrity, responsibility, quality, discipline and teamwork. 3	3 Perform all duties with emphasis on integrity, responsibility, quality, discipline and teamwork. 3
Demonstrate and practice safe work habits in the lab area as outlined in the NIMS Framework for Machining Skills. 4	4 Demonstrate and practice safe work habits in the lab area as outlined in the NIMS Framework for Machining Skills. 4
Perform bench work processes, hacksaw, file an	5 Perform bench work processes, hacksaw, files, layout, drill, tap and other activities to meet industry standards. 5

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meet industry standards. 5	
Perform safe and functional activities on the following machines: horizontal band saw, vertical band saw, drill press, arbor press, lathes, and mills. 6	6 Perform safe and functional activities on the following machines: horizontal band saw, vertical band saw, drill press, arbor press, lathes, and mills. 6
Perform tasks with cutting hand tools and non-cutting hand tools. 7	7 Perform tasks with cutting hand tools and non-cutting hand tools. 7
Identify and explain the handling procedure for hazardous material and the content of MSDS (Material Safety Data Sheet). 8	8 Identify and explain the handling procedure for hazardous material and the content of MSDS (Material Safety Data Sheet). 8
Identify safety needs and regulations in a machine shop. 9	9 Identify safety needs and regulations in a machine shop. 9
Identify non-cutting hand tools and the proper use of them. 10	10 Identify non-cutting hand tools and the proper use of them. 10
Prepare for a bench work process. 11	11 Prepare for a bench work process. 11
Hand saw with a hacksaw. 12	12 Hand saw with a hacksaw. 12
Bench file the workpiece. 13	13 Bench file the workpiece. 13
Dress and true grinding wheels on bench and pedestal grinders. 14	14 Dress and true grinding wheels on bench and pedestal grinders. 14
De of and applications. 15	Demonstrate knowledge of power saws, parts, and applications. 15

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Demonstrate the care and safe use of the power saw. 16	16 Demonstrate the care and safe use of the power saw. 16
Cut and weld band saw blades. 17	17 Cut and weld band saw blades. 17
Perform operations on the cut-off saw. 18	18 Perform operations on the cut-off saw. 18
Perform operations on the vertical band saw. 19	19 Perform operations on the vertical band saw. 19
Demonstrate knowledge of drill press, parts, and applications. 20	20 Demonstrate knowledge of drill press, parts, and applications. 20
Demonstrate the care and safe use of the drill press. 21	21 Demonstrate the care and safe use of the drill press. 21
Calculate and set the cutting speed and feed on the drill press. 22	22 Calculate and set the cutting speed and feed on the drill press. 22
Sharpen drills. 23	23 Sharpen drills. 23
Set up a drill press and drill holes. 24	24 Set up a drill press and drill holes. 24
Shape and finish holes on a drill press. 25	25 Shape and finish holes on a drill press. 25
Tap holes by hand and machine on a drill press. 26	26 Tap holes by hand and machine on a drill press. 26
Thread by hand with taps and dies. 27	27 Thread by hand with taps and dies. 27
Op[illegible] pr[illegible]	28 Operate an arbor press. 28

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Use chisels and punches. 29	**29 Use chisels and punches.** 29
Demonstrate knowledge of hazardous materials handling. 30	**30 Demonstrate knowledge of hazardous materials handling.** 30
Demonstrate knowledge of hazardous materials storage. 31	**31 Demonstrate knowledge of hazardous materials storage.** 31
Demonstrate lock-out/tag-out procedures. 32	**32 Demonstrate lock-out/tag-out procedures.** 32
Demonstrate use of MSDS (Material Safety Data Sheet). 33	**33 Demonstrate use of MSDS (Material Safety Data Sheet).** 33
Measure with basic hand-held measuring instruments. 34	**34 Measure with basic hand-held measuring instruments.** 34