Arkansas CTE

Industrial Equipment Maintenance: Grades 9, 10, 11, 12

Adopted 2004

Practicing Safety	**A001.**	**Explain the importance of safety.** A001
	A002.	**Demonstrate lifting and carrying techniques.** A002
	A003.	**Demonstrate ladder use techniques.** A003
	A004.	**Practice fire safety.** A004
	A005.	**Identify safe hand tool practices.** A005
	A006.	**Identify personal safety practices.** A006
	A007.	**Identify safe working practices related to the use of power tools.** A007
	A008.	**Demonstrate lockout/tagout procedures.** A008
	A009.	**Explain safe working practices around electrical hazards.** A009
	A010.	**Demonstrate safe housekeeping procedures.** A010
	A011.	**Comply with OSHA and EPA regulations for a safe work site.** A011
	A012.	**Identify emergency first aid procedures.** A012
	A013.	**Demonstrate safe machine shop practices.** A013
	A014.	**Demonstrate safe welding shop practices.** A014
Performing Mathematical Calculations Related to Measurement	**B001.**	**Perform calculations using fractions.** B001
	B002.	**Convert between fractions and decimals.** B002
	B003.	**Compare numbers and calculate ratios.** B003
	4.	**Use geometric functions.** B004

Skip to main content

	B005. Perform algebraic equations. B005
	B006. Apply trigonometric functions. B006
	B007. Make metric measurements and conversions. B007
	B008. Make linear measurements accurately to 1/16". B008
	B009. Use a micrometer to measure accurately to .001". B009
	B010. Use a dial caliper to measure accurately to .001". B010
	B011. Use combination squares and protractors. B011
	B012. Use a height gauge and surface plate to lay out and measure parts. B012
	B013. Use inside micrometers and telescoping gauges. B013
	B014. Use thread pitch, drill point, center, and radius gauges. B014
	B015. Calculate speeds and feeds for machine tools. B015
Demonstrating Mechanical Skill with Hand and Power Tools	**C001.** Select appropriate hand tools. C001
	C002. Cut stock accurately with a hand hacksaw. C002
	C003. Use a file to de-burr, radius, and chamfer parts. C003
	C004. Use punches and chisels properly. C004
	C005. Cut internal and external threads with hand tools. C005
	C006. Remove damaged screws with easy-outs. C006
	C007. Use fixed and adjustable reamers. C007
	C008. Thread pipe with hand tools. C008
	C009. Select appropriate power tools. C009
	C010. Use light-duty and heavy-duty drills. C010
	C011. Use reciprocating saws, circular saws, and chop saws. C011
	C012. Use hand grinders. C012
	C013. Use power sheet metal shears. C013
	.4. Use a bench grinder to sharpen punches, chisels, drill bits, and other cutting tools. C014

Skip to main content

	C015. Use a hydraulic press. C015
	C016. Use a drill press. C016
	C017. Use a band saw. C017
	C018. Identify types of metals. C018
	C019. Use power-driven pipe threaders. C019
Maintaining Systems	**D001.** Demonstrate knowledge of hydraulic system operation. D001
	D002. Interpret diagrams and schematics for hydraulic systems. D002
	D003. Install hydraulic system components. D003
	D004. Apply preventive maintenance measures for hydraulic systems. D004
	D005. Inspect and troubleshoot hydraulic systems. D005
	D006. Demonstrate knowledge of pneumatic system operation. D006
	D007. Interpret diagrams and schematics for pneumatic systems. D007
	D008. Install pneumatic system components. D008
	D009. Apply preventive maintenance measures for pneumatic systems. D009
	D010. Inspect and troubleshoot pneumatic systems. D010
	D011. Demonstrate knowledge of electrical system operation. D011
	D012. Interpret diagrams and schematics for electrical systems. D012
	D013. Install electrical system components. D013
	D014. Apply preventive maintenance measures for electrical systems. D014
	D015. Inspect and troubleshoot electrical systems. D015
	D016. Demonstrate knowledge of mechanical system operation. D016
	D017. Interpret diagrams and schematics for mechanical systems. D017
	D018. Install mechanical system components. D018
	D019. Apply preventive maintenance measures for mechanical systems. D019
	:0. Inspect and troubleshoot mechanical systems. D020

Skip to main content

Performing Milling Operations	**E001.**	**Mill stock to size.** E001
	E002.	**Indicate a vise.** E002
	E003.	**Use a center finder.** E003
	E004.	**Drill and ream holes.** E004
	E005.	**Drill a bolt circle using a digital readout system.** E005
	E006.	**Use a rotary table.** E006
	E007.	**Use a dividing head.** E007
	E008.	**Use a boring head.** E008
	E009.	**Cut angles using a sine bar.** E009
Performing Turning Operations	**F001.**	**Use carbide and HSS cutting tools.** F001
	F002.	**Use a three-jaw chuck.** F002
	F003.	**Use a four-jaw chuck.** F003
	F004.	**Use a collet chuck.** F004
	F005.	**Turn stock between centers.** F005
	F006.	**Use a follow rest.** F006
	F007.	**Use a steady rest.** F007
	F008.	**Cut a short taper using the compound rest.** F008
	F009.	**Cut a taper using the taper attachment.** F009
	F010.	**Use a parting tool.** F010
	F011.	**Use a boring bar.** F011
	F012.	**Cut external threads.** F012
	F013.	**Drill holes using straight and taper shank drills.** F013
Performing Welding Operations	**G001.**	**Demonstrate knowledge of welding processes.** G001
	G002.	**Perform visual inspection of welds.** G002
	)3.	**Perform oxyfuel cutting operations.** G003

Skip to main content

	G004. Perform SMAW welding operations. G004
	G005. Perform GMAW welding operations. G005
	G006. Perform FCAW welding operations. G006
	G007. Perform GTAW welding operations. G007
Working with Technical Drawings	**H001.** Interpret assembly drawings. H001
	H002. Interpret building diagrams (including site plans). H002
	H003. Develop sketches (including isometric and orthographic). H003
	H004. Compute materials from drawings. H004
	H005. Use a CAD program to create sketches. H005
Practicing Quality Control	**I001.** Apply TQM techniques. I001
	I002. Demonstrate knowledge of ISO quality standards. I002
	I003. Maintain inventory. I003
Exploring Careers	**J001.** Investigate careers in the industrial maintenance field. J001
	J002. Participate in the co-curricular student organization activities J002