Arkansas CTE

Machine Tool Technology: Grades 9, 10, 11, 12

Adopted 2004

Ensuring industrial safety and environmental protection	A001.	Demonstrate safe workplace practices A001
	A002.	Handle hazardous materials as assigned A002
Managing a career as a machinist	B001.	Develop a short-term career plan B001
	B002.	Complete job application procedures B002
	B003.	Work as a member of a team to accomplish a goal B003
	B004.	Explain the management structure of a local machining company B004
	B005.	Identify rights and responsibilities of employees and employers in the machining industry B005
	B006.	Identify principles of technology that every employee should know to succeed in the machining industry B006
	B007.	Identify relationships between a machining company and the community B007
	B008.	Identify key elements of planning every employee should know to succeed in the machining industry B008
	B009.	Explain the basic principles of personal finance management B009
Planning and managing machining jobs	C001.	Develop a process plan for a part requiring milling, drilling, turning, or grinding C001
	C002.	Write a set of directions for a machining-related task or project C002
Performing machining jobs	D001.	Perform manual bench work operations, including deburring parts, performing press fits, and using bench vise and hand tools as applicable D001

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	D002. Perform manual layout operations, including laying out the location of hole centers and surfaces D002
	D003. Perform between centers turning operations for straight turning D003
	D004. Set up and carry out chucking operations for turning D004
	D005. Perform routine power feed milling, using power feeds D005
	D006. Perform routine vertical milling D006
	D007. Perform routine surface grinding, location of surfaces, and squaring of surfaces, using manual surface grinders with a wheel 10" and smaller in diameter D007
	D008. Perform routine drill press operations D008
	D009. Set up and operate power saws for cutoff operations D009
	D010. Explain the functions and operations of a CNC milling machine, CNC lathe, and wire electric discharge machine (EDM) D010
	D011. Write simple RS274-D programs, using G and M codes for a CNC milling machine and/or CNC lathe D011
Performing quality control and inspection	**E001.** Inspect simple parts, using precision tools and techniques E001
	E002. Inspect samples for the required data according to a sampling plan E002
Performing process adjustment and improvement	**F001.** Make process adjustments or improvements to the production of a single part F001
	F002. Participate as a member of a team for routine production process improvement F002
Performing general maintenance	**G001.** Perform general housekeeping and maintenance G001
	G002. Perform preventive maintenance on machine tools G002
	G003. Manage tooling maintenance G003
Communicating with others	**H001.** Demonstrate reading skills on a level required for employment in the machining industry H001
	H002. Demonstrate writing skills on a level required for employment in the machining industry H002

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	H003. Demonstrate speaking skills on a level required for employment in the machining industry H003
	H004. Demonstrate listening skills on a level required for employment in the machining industry H004
Applying mathematical operations	**I001.** Perform basic arithmetic operations I001
	I002. Apply basic geometric concepts and terminology to machining tasks I002
	I003. Apply basic algebraic concepts and terminology to machining tasks I003
	I004. Apply basic trigonometric concepts and terminology to machining tasks I004
	I005. Apply basic statistical concepts and terminology to machining tasks I005
Developing decision-making and problem-solving skills	**J001.** Apply decision rules J001
	J002. Apply basic problem-solving methods J002
Developing social skills and personal qualities	**K001.** Apply social skills in situations requiring cooperative relations with supervisors, team leaders, and team members K001
	K002. Apply a strong work ethic in the performance of job duties and in the maintenance of positive employment relations K002
Using engineering drawings and sketches	**L001.** Interpret standard orthographic blueprints L001
	L002. Interpret geometric dimensioning and tolerancing (GDT) orthographic blueprints L002
	L003. Sketch orthographic and isometric projections of parts L003
	L004. Interpret engineering drawings having multiple auxiliary views L004
	L005. Interpret geometric dimensioning and tolerancing (GDT) drawings with multiple datums L005
Applying measurements	**M001.** Apply basic measuring instruments M001
	M002. Apply precision measuring instruments M002
	M003. Apply surface plate instruments M003
Applying metalworking th	**N001.** Apply cutting theory N001
	2. Select tooling N002

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	N003. Apply material properties theory N003
	N004. Apply machine tools theory N004
	N005. Apply cutting fluids and coolants theory N005
Applying properties of materials	**O001.** Apply the properties of various metals to cutting problems O001
	O002. Apply the properties of various nonmetals to cutting problems O002
Using computers in machining	**P001.** Demonstrate computer literacy on a level required for employment in the field of machining P001
	P002. Use the computer as a tool for research and reporting of information P002