

Correlation of Agricultural Mechanics and Technology Systems, J.P. Hancock, Don Edgar, Michael Pate, Lori Dyer, Brian Hoover (Goodheart-Willcox Publisher ©2024) to NOCTI Agriculture Mechanics Job Ready Blueprint

Agricultural Mechanics and Technology Systems

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Standards / Objectives / Indicators	Narrative and Application pages
Safety	CH 5 Safety and Developing Safe Work Habits pgs. 89-117
N001 Demonstrate positive safety attitudes	Shop and Lab Practices That Improve Safety pg. 101
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	AA #3 pg. 115
	SAE #2, #3 pg. 117
	CA #2 pg. 336
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	ST #6 pg. 961
N002 Demonstrate knowledge of basic	First Aid pg. 111
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	Safety First: Emergency Shutoff pg. 178
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	ST #5 pg. 742
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Standards / Objectives / Indicators	Narrative and Application pages
N003 Demonstrate knowledge of equipment	Hazards in Agricultural Mechanics and Technology pgs. 90–91
safety systems and consumer liability issues	Safety Regulations pgs. 91–94
associated with them	Personal Protective Equipment pgs. 94–99
	Hand Tools pgs. 99–100
	Power Tools pg. 100
	Color Codes and Signal Words pg. 102
	Hazards in Agricultural Mechanics and Technology pgs. 90–91
	Safety Regulations pgs. 91–94
	Personal Protective Equipment pgs. 94–99
	Hand Tools pgs. 99–100
	Power Tools pg. 100
	Color Codes and Signal Words pg. 102
	Fire Extinguishers pgs. 102–104
	Outdoor Equipment and Machinery pgs. 108–110
	Power Tool Safety Rules
	Drilling Tool Rules pg. 188
	Cutting Tool Rules pg. 191
	Bench Grinder Rules pg. 203
	Safety around Electricity pgs. 516–517
	Safety pgs. 724–726
	Clothing and PPE pg. 724
	Storing Oxyfuel pgs. 724–725
	Using Oxyfuel Equipment Safely pg. 725
	Using the Torch pgs. 725–726
	GTAW Safety pgs. 800–802
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	AA #1 pg. 213
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NOO1 Safaty First notes are included	7 Hand Tools: Cutting into an Existing Wall: Waaring DDE When
throughout the text. A list of Safety-First notes	Ising a Cold Chisel: Using a File or Rasn: Clamping Force: DDF
included in each chanter has been provided	and Impact Tools: Using the Correct Tool for the Joh: Always Use
for convenience of use	a Scraper: Shop Brushes and Brooms: 8 Power Tools: Emergency
for convenience of use.	Shutoff: AC/DC Rating: Extension Cords: NiCad Rattery Toxicity:
	Preumatic Power Tools: Personal Protective Equipment: Using
	Nail Guns and Prad Nailars: Hydraulic Jacks and Prosses: Circular
	Saws: Table Saws: Band Saws: Securing the Workpiece: Daners
	and Jointers: Grinders and Sanders: Die Grinders: Using
	Compressed Air: 9 Materials Easteners and Hardware: Lead-
	Rased Paint: Caustic Concrete: Driving Easteners and DDE: Using
	Adhesiyes: 11 Fundamentals of Woodworking: Dull Blades:
	Lising a Miter Saw: Rin Cuts: Sawston: Cutting and Chiseling: CNC
	Router: Securing the Wood: 12 Designing Planning and
	Constructing Woodworking Projects: Using Compressed Air
	Ventilation: 13 Land Surveying and Site Analysis: Tripods: Sharp
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	Flatwork: Mixing Concrete: Heavy Lifting: 15 Masonry: Using the
	Correct Tool for the Job' Brick Hammers: Muriatic Acid:
	Hazardous Chemicals: Portland Cement: Mixing Mortar: Mortar
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	Bad Weather; Staying Safe; 17 Finishing Structures: Carrying
	and Installing Windows; PPE for Insulation Work; 19 Fencing :
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	Property; Calling before Digging; Staying Hydrated; Handling
	Fence Wire; 20 Electric Power: Safety with Electricity; Using the
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	Supply; Testing the Conductor; Electronic Testers; 21 Wiring AC
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	Power; Marking Hot Wires; Eye Protection; Junction Boxes;
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	Using Electric Motors; Disconnecting the Power Supply (2); Eye
	Protection; Manufacturer's Specifications; Ground Connection;
	Reeping Electric Motors Clean; Safety Guards; 24 Plumbing
	Design and Installation: Wearing PPE when Connecting Pipe;
	Always wear Eye Protection; working with Open Flames;
	Preventing Fires, Gus Pipe System; 25 Farm and Landscape
	Controls: Fans: Manure Dit and Grain Dust Safety:
	Lockout/Tagout: Protect the Environment: 27 Fundamentals of
	Metalworking: Pneumatic Hammers: Bolt Cutter Safety: Grinder
	Safety: Soldering Safety: Did You Read the Label? 28 Oxyfuel
	Welding, Cutting, and Brazing: Propane and LPG Gases: Oxvaen
	Cylinders; Torch Bodies and Attachments; Cuttina Tips; Excess
	Fuel Gas; Concrete Surfaces and Moisture; Use PPE When
	Cutting; Eye Protection for Oxyfuel Welding; 29 Shielded Metal
	Arc Welding: Arc Welding Safety; Workpiece Connections; Use
	PPE When Welding; Releasing the Electrode; Performing 3G and
	3F Welds; 30 Gas Metal and Flux Cored Arc Welding: Changing
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N005 Demonstrate structural and	Weather Hazards pg. 107
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N006 Exhibit knowledge and proficiency of	CH 29 Shielded Metal Arc Welding ngs 743–780
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N007 Exhibit knowledge and proficiency of gas metal arc welding (GMAW) procedures	CH 30 Gas Metal and Flux Cored Arc Welding pgs. 781–813 AA #1, #2 pg. 812 TC #1, #2 pg. 812 ST #1–6 pg. 812 SAE #1–3 pg. 813
N008 Exhibit knowledge and proficiency of gas cutting and welding procedures	CH 28 Oxyfuel Welding, Cutting, and Brazing pgs. 712–742 CH 29 Shielded Metal Arc Welding pgs. 743–780 CH 30 Gas Metal and Flux Cored Arc Welding pgs. 781–813 CH 31 Gas Tungsten Arc Welding pgs. 814–833 CH 32 Plasma Cutting pgs. 834–849 Oxyfuel: AA #1–3 pg. 741 TC #1–2 pg. 741 ST #1–6 pgs. 741–742 SAE #1–2 pg. 742 SMAW: AA #1–2 pg. 779 TC #1–2 pg. 779 ST #1–6 pg. 780 SAE #1–2 pg. 780 <i>(continued)</i>

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Exhibit knowledge and proficiency of plastic welding procedures	
N009 Exhibit knowledge of milling machines,	CH 7 Hand Tools pgs. 143–175
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Standards / Objectives / Indicators	Narrative and Application pages
N009 Exhibit knowledge of milling machines,	(continued)
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N010 Exhibit knowledge and proficiency of	CH 37 Hydraulic and Pneumatic Power pgs. 940-961
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N011 Exhibit knowledge and proficiency of engine system	CH 34 Small Engine Performance, Maintenance, and Troubleshooting pgs. 875–894
	CH 35 Drive Trains and Power Systems pgs. 895–913
	CH 36 Machinery Maintenance and Management pgs. 914–939
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	ST #1–6 pg. 874
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N012 Exhibit knowledge and proficiency of	CH 20 Electric Power pgs. 498–522
electrical systems	CH 21 Wiring AC Circuits pgs. 523–p549
	CH 22 Wiring DC Circuits pgs. 550–577
	CH 23 Electric Motors and Controls pgs. 578–599
	AA #1–3 pg. 521
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	SAE #1, 3 pg. 522
N013 Exhibit knowledge and proficiency of	CH 35 Power Trains and Power Systems pgs. 895–913
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Standards / Objectives / Indicators	Narrative and Application pages
N014 Service and maintain machines and	CH 34 Small Engine Performance, Maintenance, and
equipment	Troubleshooting pgs. 875–894
	CH 36 Machinery Maintenance and Management pgs. 914–939
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	ST #5 pg. 599
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N016 Troubleshoot and diagnose machines	CH 34 Small Engine Performance, Maintenance, and
and equipment	Troubleshooting pgs. 875–894
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N017 Disassemble and reassemble machines	CH 34 Small Engine Performance, Maintenance, and
and equipment, test operation, and adjust as	Troubleshooting pgs. 875–894
necessary	Engine Troubleshooting pgs. 886–889
	SAE Connection: Small Engine Troubleshooting and Repair pg. 886
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N018 Solve problems to determine voltage,	CH 20 Electric Power pgs. 498–522
amperage, resistances, and wattages	CH 21 Wiring AC Circuits pgs. 523–p549
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	ST #4 pg. 446
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N018 Solve problems to determine voltage,	(continued)
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N019 Exhibit knowledge and show proficiency	Tools for Electrical Safety pg. 516
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N020 Exhibit knowledge and proficiency of	CH 21 Wiring AC Circuits pgs. 523–p549
structural wiring	CH 22 Wiring DC Circuits pgs. 550–577
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N021 Disassemble, clean, and reassemble	CH 23 Electric Motors and Controls pgs. 578–599
electric motors	Electric Motors pg. 555
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N022 Exhibit knowledge and proficiency of	CH 24 Plumbing Design and Installation pgs. 602–625
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N023 Demonstrate knowledge of framing	CH 16 Framing Structures pgs. 390–417
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	TC #1–2 pg. 242
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N024 Calculate board feet and cost of	Calculating Material Cost pgs. 260–261
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N025 Demonstrate knowledge of concrete	CH 14 Concrete Foundations and Flatwork pgs. 337–362
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	SAE #1-4 pg. 362
	AA #2 pg. 388
	ST #1–2 pg. 389
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N026 Read and interpret blueprints and plans	CH 10 Project Planning and Design pgs. 246–267
	ST #1B pg. 415
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N027 Demonstrate knowledge of roofing	CH 17 Finishing Structures pgs. 418–447
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	SAE #1 pg. 447
	ST #3 pg. 266
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N028 Demonstrate knowledge of ventilation	CH 26 Environmental Controls pgs. 650–675
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Agribusiness	

Standards / Objectives / Indicators	Narrative and Application pages
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	Calculating Material Cost pgs. 260–261
	Bill of Materials pgs. 710–711
	ST #4 pg. 266
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N030 Determine cost of a project	Total Project Cost pg. 259
	Calculating Material Cost pgs. 260–261
	CA #1 pg. 65
	AA #3 pg. 87
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	SAE #1 pg. 243
N031 Accurately record and interpret	Motor Nameplate pg. 586
nameplate information	ST #5 pg. 599
N032 Calculate cost of operating equipment	Calculating Material Cost pgs. 260–261
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N033 Establish and maintain effective	Career and Leadership Development Events pg. 47
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	SAE #3 pg. 292
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N034 Calculate, maintain, and analyze	SAE Recordkeeping pg. 58
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N035 Display knowledge of basic information	SAE Recordkeeping pg. 58
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N036 Set up and adjust field survey equipment	CH 13 Surveying and Site Analysis pgs. 312–336 Using Surveying Equipment pgs. 319–323 AA #1, #4 pg. 335 Lab Application #1 pg. 335 TC #1–3 pg. 335 ST #1 pg. 335
N037 Calculate, measure, maintain, and analyze data from field survey	Calculating Distance pgs. 317–318 Using Surveying Equipment pgs. 319–323 Leveling pgs. 323–325 AA #1, #4 pg. 335 Lab Application #1 pg. 335 TC #1–3 pg. 335 ST #1 pg. 335
N038 Complete differential or profile leveling problem	Differential Leveling pgs. 323–324 Profile Leveling pg. 325
N039 Read and interpret maps including property, township, zoning, and topographical maps	CH 13 Surveying and Site Analysis pgs. 312–336 ST #5 pg. 267 ST #2 pg. 495
N040 Demonstrate familiarity with national environmental agencies such as Natural Resource Conservation Service (NRCS), Environmental Protection Agency (EPA), or Department of Environmental Quality (DEQ)	pgs. 81, 90, 93
Careers in Agriculture Mechanics	
N041 Examine career opportunities in the agriculture power and systems technologies	SAE for ALL Profiles: Dylan Munns, Safety Ag Mech SAE, pg. 2; Cody Bryden, Natural Resources SAE, pg. 118; Justin Preece, Lead Kubota Technician pg. 244; Mackenzie Foley, Ag Mech SAE pg. 310; Chayse Wilson, Ag Mech SAE, pg. 498; Peyton Dyer, Sea Bee Builder, pg. 600; Kinley Clegg, pg. 676; Kyle Waitman, Entrepreneur, pg. 774; Jordan Wiertsema, Design Engineer, pg. 807; Denver Ramsey, Manager of Operations, pg. 850 Career Connections in each chapter: Farm Equipment Service Technician pg. 16; Agricultural Mechanics Teacher pg. 35; Biochemist pg. 60; Field Scout Technician pg. 83; Product Safety and Compliance Engineer pg. 111; Quality Control Inspector pg. 137; Farrier pg. 169; Equipment Assembler pg. 209; Materials Scientist pg. 237; Architect pg. 262; Cabinetmaker pg. 285; Woodworker pg. 304; Surveyor pg. 331; Civil and Chemical Engineering Technicians pg. 354; Masonry Worker pg. 384; Construction and Building Inspector pg. 410; Interior Designer pg. 441; Nursery/Greenhouse Manager pg. 466; Livestock Farm or Ranch Manager pg. 491; Electrician pg. 517; Electrical Engineers pg. 544; Agricultural Machinery Engineer pg. 572; <i>(continued)</i>

Standards / Objectives / Indicators	Narrative and Application pages
N041 Examine career opportunities in the agriculture power and systems technologies	<i>(continued)</i> Industrial Machinery Mechanics pg. 594; Plumbers, Pipefitters, and Steamfitters pg. 620; Sprinkler and Irrigation System Technician pg. 644; Grain Elevator Manager pg. 669; Welding Supply Salesperson pg. 706; Material Recovery Facility Managers pg. 736; Pipeline Welder pg. 774; Welding Inspector pg. 807; Precision Welder pg. 828; Design Engineer pg. 844; Wind Turbine Technician pg. 869; Small Engine Mechanic pg. 890; Heavy Equipment Service Technician pg. 908; Electro- Mechanical Technician pg. 934; Hydraulics Technicians pg. 957
N042 Identify advanced training or post-	CH 2 Careers and Employability Skills pgs. 21–39
secondary education needed for careers in agriculture power and systems technologies	Career Connections throughout text (see preceding table cell for list and page numbers)
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	TC #3 pg. 38
	ST #1–2 pg. 38
	AA #2–3 pgs. 63–64
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	CA #1 pg. 336
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	SAE #1 pg. 417
	SAE #2 pg. 447
	SAE #2 pg. 472
	SAE #1 pg. 625
N043 Demonstrate knowledge of personal characteristics important to specific	CH 2 Careers and Employability Skills pgs. 21–39
occupations in power and systems	list and page numbers)
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