Correlation of

***Modern Metalworking,* Stier/Walker**

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To

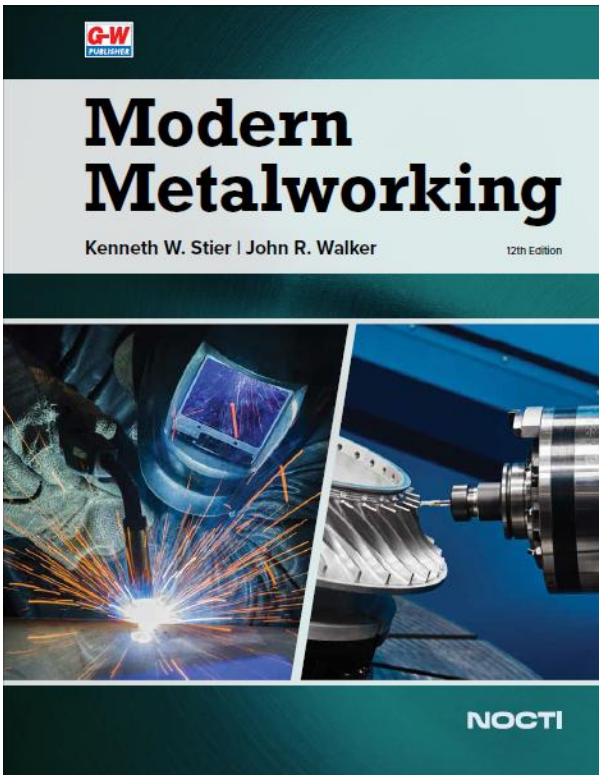
NOCTI Job Ready: Precision Machining Credential

Goodheart-Willcox is pleased to partner with NOCTI and Nocti Business Solutions (NBS), a leading provider of industry certification solutions for skill verification across the nation. With over 55 years of experience, NOCTI/NBS is a valuable partner both within the CTE community and industry to improve America's workforce. Goodheart-Willcox has created correlations between select products and the standards and competencies that are the basis for NOCTI/NBS credentials, to the benefit of states, instructors, and students working toward NOCTI/NBS credentials.

NOCTI/NBS certifications (knowledge-based and skill-based) are developed by national teams of subject matter experts as part of the process that meets personnel accrediting standards and requirements under ISO 17024, resulting in credentials measuring skills and competencies critical for learner success outside the classroom. NOCTI/NBS offers test development, test delivery, and psychometric services to support skill verification, using the latest tools and methods to provide relevant and helpful solutions for workforce development.

The following chart correlates the *Modern Metalworking* textbook to the NOCTI/NBS national standards and competencies for Job Ready: Precision Machining. Corresponding content from the *Modern Metalworking* textbook that can be used by a learner to help achieve the standards and competencies is listed in the right column.

For more information about NOCTI, visit https://www.nocti.org.



Job Ready: Precision Machining	G-W Content
Organization and Shop Safety Practices	
Demonstrate safe work habits and operating procedures	Textbook: pg. 41, 516–517
Clean and maintain personal work area and equipment	Textbook: pg. 539–540

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Job Ready: Precision Machining	G-W Content
Select and appropriately use cutting fluids	Textbook: pg. 393–394
Identify and appropriately use Personal Protective Equipment (PPE)	Textbook: pg. 40–41
Identify environmental and safety considerations established by the EPA, OSHA, and listed in SDS publications	Textbook: pg. 39–40, 47
Measurement and Inspection	
Identify, select, and calibrate precision and semi-precision measuring tools	Textbook: pg. 102–123
Measure workpiece to verify compliance with print specifications	Textbook: pg. 102–123, 134
Display knowledge of quality control standards and process improvement, including SPC	Textbook: pg. 131–134
Metallurgical Processes and Heat Treating	
Identify the properties and characteristics of common metals and their effect on machinability	Textbook: pg. 54–64
Identify the AISI/SAE and UNS steel identification systems	Textbook: pg. 55–56
Identify heat treating processes and objectives	Textbook: pg. 700–704
Blueprint Interpretation and Process Planning	
Interpret blueprints including geometric dimensioning and tolerancing (GD&T) symbols	Textbook: pg. 74–85
Develop an order of operations (process plan) based on blueprint specifications	Textbook: pg. 93–94
Layout and Benchwork	
Identify and appropriately use hand tools	Textbook: pg. 165-–177
Identify and safely use power hand tools	Textbook: pg. 370—377, 382—385, 407
Grind and shape tools using a pedestal/bench grinder	Textbook: pg. 413-–414
Perform semi-precision and precision layout	N/A
Band Saw Machines	
Identify parts and preventive maintenance of a band saw	Textbook: pg. 371—375
Explain safe principles of operation	Textbook: pg. 374, 376—377
Set up and perform band saw machine operations	Textbook: pg. 371—375
Lathes	

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Job Ready: Precision Machining	G-W Content
Identify parts and preventive maintenance of a lathe	Textbook: pg. 435—439, 461 Workbook: pg. 95
Explain safe principles of operation	Textbook: pg. 435—439
Select and maintain appropriate tools	Textbook: pg. 440—445
Calculate appropriate cutting speed, feed rate, and depth of cut	Textbook: pg. 446—447
Grind and form lathe tools	Textbook: pg. 441—442
Demonstrate knowledge of various workholding methods (e.g., independent and universal chucks, collets, faceplate, between centers, steady and follower rests)	Textbook: pg. 447—460
Set up and perform lathe machine operations (e.g., turning, boring, threading, taper turning, knurling, grooving and cut-off, drilling and tapping, filing, polishing)	Textbook: pg. 468—480, 486—493
Identify appropriate uses for carbide inserts	Textbook: pg. 443—444
Milling Machines	
Identify parts and preventive maintenance of a mill	Textbook: pg. 500—503, 509—511
Explains safe principles of operation	Textbook: pg. 516—517
Select and maintain appropriate tools	Textbook: pg. 504—509
Calculate appropriate cutting speed, feed rate, and depth of cut	Textbook: pg. 512—514
Explain various workholding methods (e.g., mill vise, table set-ups, angle plates, indexing heads, v-blocks)	Textbook: pg. 514—516
Set up milling machines (e.g., head alignment, vise alignment, tool holder selection, establishing a part zero, set DRO use)	Textbook: pg. 522—538
Perform milling operations (e.g., pocketing, slotting, hole-making, peripheral and face milling)	Textbook: pg. 522—538
Surface Grinding	
Identify parts and preventive maintenance of a surface grinder	Textbook: pg. 417—419
Select appropriate grinding wheel	Textbook: pg. 424—426
Explain safe principles of operation (e.g., wheel mounting and dressing, ring testing, workholding, grinding parallel and perpendicular surfaces)	Textbook: pg. 418, 426, 429
Computer Numerical Control (CNC) Programming, Preparation, Operations	

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Job Ready: Precision Machining	G-W Content
Demonstrate knowledge of axis and coordinate systems	Textbook: pg. 549—552
Read and write basic G and M codes	Textbook: pg. 573—579
Perform basic setup and operation for CNC mill (e.g., work offset, tool offset, workholding devices, toolholding devices)	Textbook: pg. 579—587
Perform basic setup and operation for CNC lathe (e.g., work offset, tool offset, workholding devices, toolholding devices)	N/A (setup and operation specific to CNC mill)
Drill Press	
Identify parts and preventive maintenance of a drill press	Textbook: pg. 382—406
Determine appropriate tooling and workholding devices	Textbook: pg. 382—390
Explain safe principles of operation (e.g., drilling, reaming, countersinking, counterboring, tapping)	Textbook: pg. 401—405, 407

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