



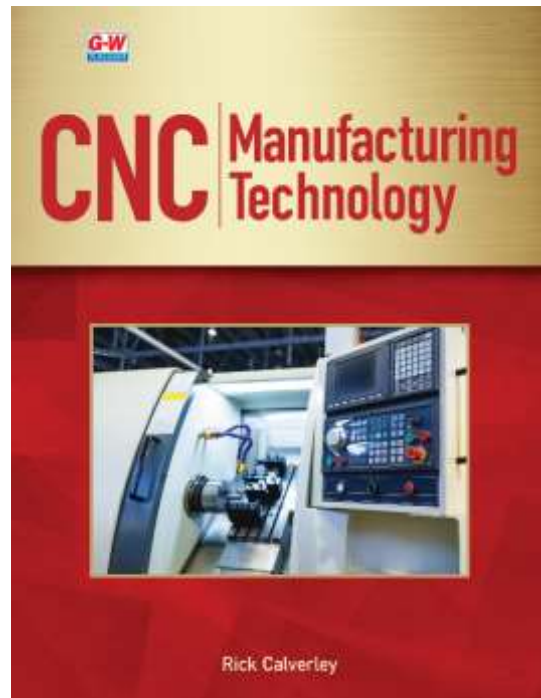
**Correlation of
CNC Manufacturing Technology, Calverley
(Goodheart-Willcox Publisher ©2021)**

to

NIMS Credential Overviews: CNC Mill Programming Setup & Operations

The following chart correlates Goodheart-Willcox Publisher's *CNC Manufacturing Technology* to the NIMS Credential Overviews for CNC Mill Programming Setup & Operations. Listed are the knowledge and skills criteria for NIMS credentialing for CNC Mill Programming Setup & Operations, and the corresponding/applicable content from *CNC Manufacturing Technology*.

Each NIMS credential represents a collection of skills and knowledge, and a person that earns one has demonstrated competency in that occupational area. As that person earns more of these stackable credentials, they show that they are a valuable individual with an array of skills that have been verified against an industry-written standard.



Knowledge and Skills	G-W Content
CNC Mill Programming Setup & Operations	
Applied Mathematics	
Arithmetic	Chapter 4
IPM Calculations	Chapter 4
Pythagorean Theorem	Chapter 4
Right Angle Trigonometry	Chapter 4
SFM to RPM Conversion	Chapter 4
Sign Numbers	Chapter 4
Use of Scientific Calculator	Chapter 4

**Correlation of *CNC Manufacturing Technology* to NIMS Credential Overviews:
CNC Mill Programming Setup & Operations—page 2**

Knowledge and Skills	G-W Content
Cutting Tool Assembly	
Configuration (LOC and EOH)	
Holder Applications	Chapter 8
Fitting (tightening and setting)	Chapters 8, 9
Inspection of Cutters	
Inspection of Holders	Chapter 8
Geometrical Dimensioning and Tolerancing	
Datum Reference Frame (DRF)	Chapter 5
Degrees of Freedom (DOF)	Chapter 5
Feature Control Frame	Chapter 5
Geometric Control Symbols	Chapter 5
Geometric Tolerancing Categories	Chapter 5
Geometric Tolerancing Characteristics	Chapter 5
Geometric Tolerancing Zone Shapes	Chapter 5
Symbols Associated with Feature Control Frame	Chapter 5
Inspection	
Feature with Size Verification	Chapter 6
Feature without Size Verification	Chapter 6
Flatness Verification	Chapter 6
Hole Gaging	Chapter 6
Perpendicularity Verification	Chapter 6
Position Verification	Chapter 6
Profile of a Surface Verification	Chapter 6
Surface Finish Verification	Chapter 6
Machine Maintenance	
Coolants	Chapter 2
Oils and Lubrications	Chapters 2, 8
Refractometer Readings	
Machine Safety	
Machine Guarding	Chapter 3
Machining Applications	
Drilling	Chapters 9, 12

**Correlation of *CNC Manufacturing Technology* to NIMS Credential Overviews:
CNC Mill Programming Setup & Operations—page 3**

Knowledge and Skills	G-W Content
Face Milling	Chapters 9, 12
Peripheral Milling	Chapters 9, 12
Pocket Milling	Chapters 9, 12
Reaming	Chapter 9
Tapping	Chapters 9, 12
Measurements	
Reading Micrometers	Chapter 6
Reading Steel Rules	Chapter 6
Reading Vernier Scales	Chapter 6
Use of Calipers	Chapter 6
Use of Dial Indicators	Chapter 6
Use of Drop Indicators (travel dial)	Chapter 6
Use of Micrometers	Chapter 6
Use of Steel Rules	Chapter 6
Operations	
Deburring	
Fixture Offset Adjustments	Chapter 9
Geometry Offset Adjustments	Chapter 9
Machine Controls	Chapter 9
Machine Startup and Shutdown	
Machine Warm Up	
Part Loading (vise/fixture)	Chapters 1, 9
Tool Height Offset Adjustments	Chapter 9
Print Reading	
Block Tolerances	Chapter 5
Line Types and Conventions	Chapter 5
Orthographic Projection	Chapter 5
Surface Finish Requirements	Chapter 5
Title Blocks and Revisions	Chapter 5
Process Planning	
Machine Configuration	Chapters 7, 9
Machine Selection	Chapter 7

**Correlation of *CNC Manufacturing Technology* to NIMS Credential Overviews:
CNC Mill Programming Setup & Operations—page 4**

Knowledge and Skills	G-W Content
Operation Sequencing	Chapters 9, 10
Workholding Concepts/Devices	Chapters 1, 7, 9, 10
Programming	
Canned Cycles (holes)	Chapter 9
Cutter Radius Compensation	Chapter 9
Developing and Interpret Setup Sheets	Chapter 9,
Fixture Offsets	Chapter 9
Motion Commands	Chapter 9
Plotting Coordinates	Chapters 9, 12
Program Structure and Formats	Chapter 9
Programming Words (code memory)	Chapter 9
Rectangular Coordinate System	Chapter 9
Selecting Program Zero	Chapters 9, 12
Setup	
Aligning a Vise/Fixture	Chapter 1
Establish XY Zero from a Hole	Chapter 13
Establish XY Zero from Two Surfaces	Chapter 13
Machine Controls	Chapters 9, 12, 13
Program Verification (dry run)	
Shop Safety	
Blood Born Pathogen	Chapter 3
Fire Prevention/Suppression	Chapter 3
Hazardous Material Information System (HIMIS)	Chapter 3
Lock Out/Tag Out	Chapter 3
Personal Protective Equipment (PPE)	Chapter 3
Safety Data Sheets (SDS)	Chapter 3
Waste Removal	Chapter 3