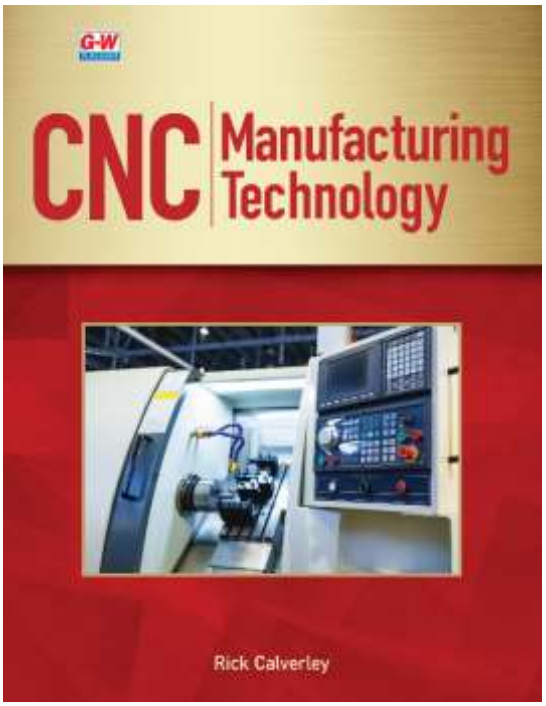
Correlation of
***CNC Manufacturing Technology,* Calverley**
(Goodheart-Willcox Publisher ©2021)
to
NIMS Credential Overviews: CNC Programming Setup & Operations

The following chart correlates Goodheart-Willcox Publisher's *CNC Manufacturing Technology* to the NIMS Credential Overviews for CNC Programming Setup & Operations. Listed are the knowledge and skills criteria for NIMS credentialing for CNC 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 Programming Setup & Operations	
Applied Mathematics	
Arithmetic	Chapter 4
IPR Calculations	Chapter 10
Pythagorean Theorum	Chapter 4
Right Angle Trigonometry	Chapter 4
SFM to RPM Conversion	Chapters 9, 10
Sign Numbers	Chapter 4
Use of Scientific Calculator	Chapter 4

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

Knowledge and Skills	G-W Content
Cutting Tool Assembly	
Fitting (tightening and setting)	Chapter 8
Inspection of Cutters	Chapter 8
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 Frames	Chapter 5
Inspection	
Feature with Size Verification	Chapter 6
Feature without Size Verification	Chapter 6
Runout Verification	Chapter 6
Surface Finish Verification	Chapter 6
Total Runout Verification	Chapter 6
Machine Maintenance	
Coolants	Chapter 2
Oils and Lubrications	Chapters 2, 8
Refractometer Readings	
Machine Safety	
Machine Guarding	Chapter 3
Machining Applications	
Facing	Chapter 7
OD Turning	Chapter 10
Measurements	
Reading Micrometers	Chapter 6
Reading Steel Rules	Chapter 6
Reading Vernier Scales	Chapter 6

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

Knowledge and Skills	G-W Content
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 10
Geometry Offset Adjustments	Chapter 10
Machine Controls	Chapter 10
Machine Startup and Shutdown	Chapter 10
Machine Warm Up	
Part Loading (chuck/collet)	Chapter 10
Workshift Adjustments	Chapters 10, 12
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	Chapter 7
Machine Selection	Chapter 7
Operation Sequencing	Chapter 10
Workholding Concepts/Devices	Chapters 1, 7, 9, 10
Programming	
Cutter Radius Compensation	Chapter 10
Developing and Interpret Setup Sheets	Chapter 10
Fixture Offsets	Chapter 10
Motion Commands	Chapter 10
Plotting Coordinates	Chapters 10, 12
Program Structure and Formats	Chapter 10
Programming Words (code memory)	Chapter 10

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

Knowledge and Skills	G-W Content
Rectangular Coordinate System	Chapter 10
Selection Program Zero	Chapter 10
Setup	
Boring Soft Jaws or Collet	
Machine Controls	Chapter 7
Mounting Workholding Devices	Chapter 7
Program Verification (dry run)	
Setting Geometry Offset for Center Cutting Tools	Chapter 10
Setting XZ Geometry Offsets	Chapter 10
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