



# Grinding I

## OVERVIEW

This certification validates that an individual has the skills and knowledge to successfully complete process planning, basic surface grinding applications, machine set ups, operations, inspection techniques and safety standards.

## COMPETENCIES

## KNOWLEDGE + SKILLS

<b>Applied Mathematics</b>	Arithmetic Pythagorean Theorem	Right Angle Trigonometry Use of Scientific Calculator
<b>Cutting Tool Selection</b>	Grinding Wheel Applications Grinding Wheel Features/Attributes	Grinding Wheel Nomenclature
<b>Geometrical Dimensioning and Tolerancing</b>	Datum Reference Frame (DRF) Degrees of Freedom (DOF) Feature Control Frame Geometric Control Symbols	Geometric Tolerancing Categories Geometric Tolerancing Characteristics Geometric Tolerancing Zone Shapes Symbols Associated with Feature Control Frames
<b>Inspection</b>	Angularity Verification Feature with Size Verification Feature without Size Verification Perpendicularity Verification	Position Verification Profile of a Surface Verification Surface Finish Verification
<b>Machine Maintenance</b>	Coolants Oils and Lubrications	Refractometer Readings
<b>Machine Safety</b>	Machine Guarding	
<b>Machining Applications</b>	Side Grinding	Surface Grinding
<b>Measurements</b>	Reading Micrometers Reading Steel Rules Reading Vernier Scales Use of Calipers	Use of Dial Indicators Use of Drop Indicators Use of Micrometers Use of Steel Rules
<b>Operations</b>	Part Loading (magnetic chuck)	Wheel Dressing
<b>Print Reading</b>	Block Tolerances Line Types and Conventions Orthographic Projection	Surface Finish Requirements Title Blocks and Revisions
<b>Process Planning</b>	Machine Configuration Machine Selection	Operation Sequencing Workholding Concepts/Devices
<b>Setup</b>	Balancing Grinding Wheels Mounting Grinding Wheels	Mounting/Dressing Magnetic Chucks



## Machining Level I Credential Overview

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### COMPETENCIES

### KNOWLEDGE + SKILLS

#### Shop Safety

Blood Born Pathogen  
Fire Prevention/Suppression  
Hazardous Material Identification System (HMIS)  
Lock Out/Tag Out

Personal Protective Equipment (PPE)  
Safety Data Sheets (SDS)  
Waste Removal