



# Machining Level I Credential Overview

## Turning I (Chucking Skills)

### OVERVIEW

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

### COMPETENCIES

### KNOWLEDGE + SKILLS

<b>Applied Mathematics</b>	Arithmetic IPR Calculations	SFM to RPM Conversion Use of Scientific Calculator
<b>Cutting Tool Assembly</b>	Fitting (tightening and setting) Inspection of Cutters	Inspection of Holders
<b>Cutting Tool Selection</b>	Cutter Applications Cutter Features/Attributes	Manufacturers Technical Data References
<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>	Feature with Size Verification Feature without Size Verification Perpendicularity Verification	Surface Finish Verification Thread Gaging Total Runout Verification
<b>Machine Maintenance</b>	Coolants Oils and Lubrications	Refractometer Readings
<b>Machine Safety</b>	Machine Guarding	
<b>Machining Applications</b>	Boring Drilling Facing ID Grooving	ID Threading OD Grooving OD Threading OD Turning
<b>Material Preparation</b>	Bar Stock Sizes	Sawing Blanks
<b>Measurements</b>	Reading Micrometers Reading Steel Rules Reading Vernier Scales Use of Calipers	Use of Dial Indicators Use of Drop Indicators (travel dial) Use of Micrometers Use of Steel Rules
<b>Operations</b>	Deburring	Part Loading (chuck/collet)
<b>Print Reading</b>	Block Tolerances Line Types and Conventions Orthographic Projection	Surface Finish Requirements Title Blocks and Revisions



# Machining Level I Credential Overview

## Turning I (Chucking)

COMPETENCIES	KNOWLEDGE + SKILLS	
<b>Process Planning</b>	Machine Configuration Machine Selection	Operation Sequencing Workholding Concepts/Devices
<b>Setup</b>	Boring Soft Jaws/Collets Mounting Chucks/Collets	Setting Tools (center and diameter) Tailstock Alignment
<b>Shop Safety</b>	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