

Tooling U Crosswalk

TOOLING U COURSES	SKILLS STANDARDS	CURRICULUM	ASSESSMENTS
ABRASIVES <ul style="list-style-type: none"> • Introduction to Abrasives • What is Grinding? • Grinding Processes • Grinding Variables • Grinding Wheel Materials • Grinding Wheel Geometry • Dressing and Truing 	<ul style="list-style-type: none"> • Machine Tool: Surface • Grinding Machine Operator 	<ul style="list-style-type: none"> • Under Development 	
CNC <ul style="list-style-type: none"> • History and Definition of CNC • Mechanics of CNC • Basics of the CNC Turning Center • Basics of the Machining Center • Basics of the CNC Swiss-Type Lathe • CNC Coordinates • Part Program • CAD/CAM Overview • CNC Manual Operations • CNC Offsets • CNC Specs for the Mill • CNC Specs for the Lathe • Creating a Turning Program • Turning Calculations • Creating a Milling Program • Milling Calculations • Canned Cycles 	<ul style="list-style-type: none"> • Machine Tool: <ul style="list-style-type: none"> — CNC Machining Center Operator — CNC Turning Center Operator 	<ul style="list-style-type: none"> • Manufacturing Technology • CNC Machining 	<ul style="list-style-type: none"> • Machine Too: CNC Machining Center Operator
ELECTRICAL MAINTENANCE <ul style="list-style-type: none"> • Electrical Units • Safety for Electric Work • Introduction to Circuits • Introduction to Magnetism • DC Circuit Components • NEC Overview • Series Circuit Calculations • Parallel Circuit Calculations • AC Fundamentals • Electrical Instruments • Electrical Print Reading • DC Power Sources • AC Power Sources • Conductor Selection • Battery Selection 	<ul style="list-style-type: none"> • Electrical Trades: <ul style="list-style-type: none"> — Commerical/Industrial — Residential • Electrician's Assistant 	<ul style="list-style-type: none"> • Basic Wiring • Residential Wiring • Commercial and Industrial Wiring 	<ul style="list-style-type: none"> • Electrical Trades: <ul style="list-style-type: none"> — Commerical/Industrial — Residential • Electrician's Assistant

TOOLING U COURSES	SKILLS STANDARDS	CURRICULUM	ASSESSMENTS
<p>SAFETY</p> <ul style="list-style-type: none"> • Introduction to OSHA • Fire Safety and Prevention • Bloodborne Pathogens • Personal Protective Equipment • Lockout/Tagout Procedures • Safety for Lifting Devices • Machine Guarding • Hand and Power Tool Safety • Environmental Safety Hazards • Flammable/Combustible Liquids • MSDS and Hazard Communication • Metalworking Fluid Safety • Noise Reduction and hearing Conservation • Waling and Working Surfaces • Confined Spaces • Respiratory Safety • Powered Industrial Truck Safety 		<ul style="list-style-type: none"> • Hand and Tool Safety CD • Hazard Communications CD • Hearing Conservation CD • How to Prevent Slips, Trips & Falls CD • Occupational Health & Safety • Fire Extinguisher Use CD • Bloodborne Pathogens CD • Food Borne Illness VHS • Understanding Food Borne Pathogens VHS • Personal Protective Equipment CD • Safe Lifting CD • Respirator Safety CD 	
<p>SHOP ESSENTIALS</p> <ul style="list-style-type: none"> • Math: <ul style="list-style-type: none"> — Fundamentals — Fractions and Decimals — Units of Measurement • Basics of Tolerance • Blueprint Reading • Geometry: <ul style="list-style-type: none"> — Lines and Angles — Triangles — Circles and Polygons • Shop Geometry Overview 		<ul style="list-style-type: none"> • Whole Numbers • Measurement • Geometry • Decimals and Percents • Fractions 	
<p>WELDING</p> <ul style="list-style-type: none"> • What is Arc Welding • Arc Welding Safety • Arc Welding Processes • Overview of Weld Types • Electrical Power for Arc Welding • Ferrous Metals for Welding • Nonferrous Metals for Welding • SMAW Applications • GMAW Applications • FCAW Applications • GTAW Applications • Arc Welding Symbols and Codes • Arc Welding Power Sources • Electrode Selection • Arc Welding Aluminum Alloys 	<ul style="list-style-type: none"> • Welding: <ul style="list-style-type: none"> — Cutting Process Operator — Flux-Cored Arc Welder — Gas Metal Arc Welder — Gas Tungsten Arc Welder — Shielded Metal Arc Welder 	<ul style="list-style-type: none"> • Fundamentals of Welding • Oxyacetylene Welding and Oxyfuel Cutting • SMAW: Shielded Metal Arc Welding and Carbon Arc Cutting – Air • GMAW: Gas Metal Arc Welding and FCAW: Flux-Cored Arc Welding • GTAW: Gas Tungsten Arc Welding and Plasma Arc Cutting • Shielded Metal Arc Pipe Welding • Welding Interactive Tests 	<ul style="list-style-type: none"> • Welding: <ul style="list-style-type: none"> — Cutting Process Operator — Flux-Cored Arc Welder — Gas Metal Arc Welder — Gas Tungsten Arc Welder — Shielded Metal Arc Welder