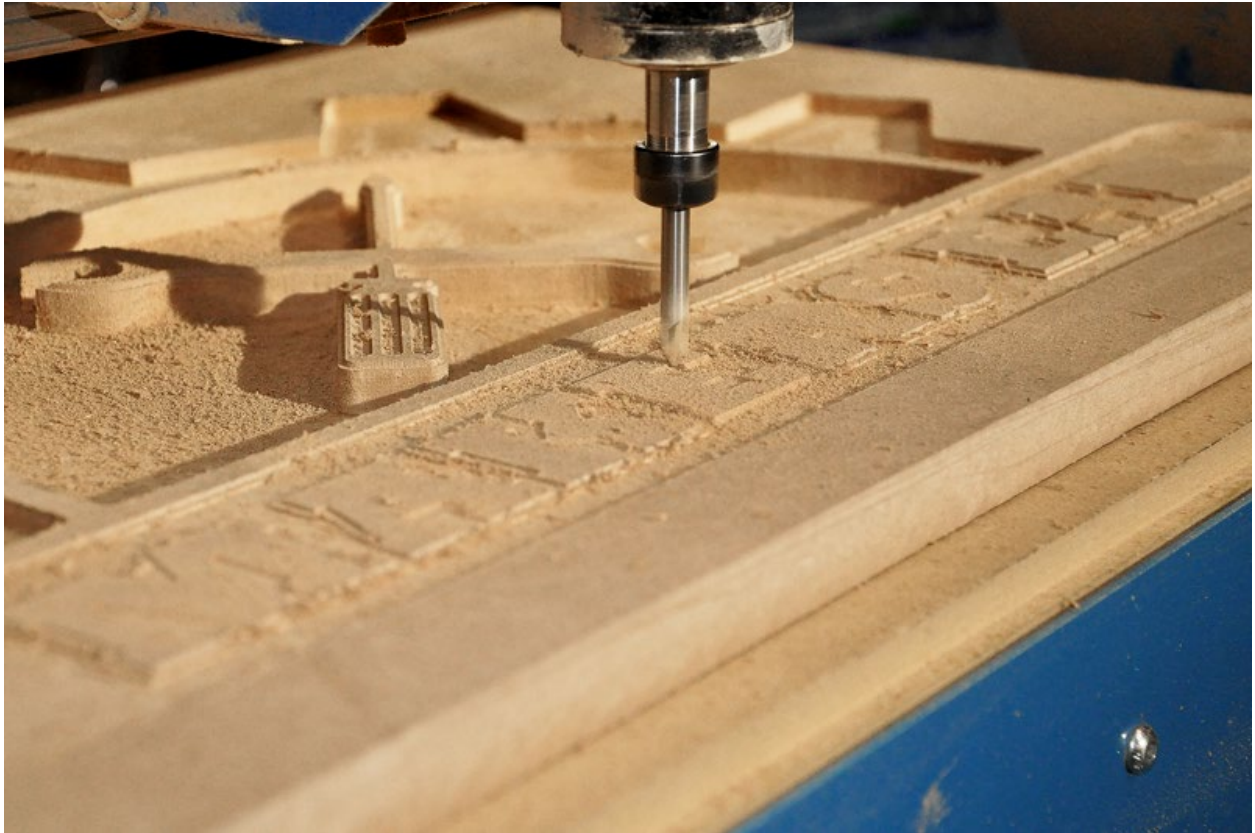


Introduction to CNC Routers

COURSE OUTLINE



intelitek ®

Introduction to CNC Routers

Catalog Number	8160-0002
Category	CNC
Duration	12 Hours
Software Supplied	VCarve Pro Router Cutting and Design Software Mach3 Router Control Software

LESSON 1: INTRODUCTION TO CNC

- Duration: 2 Hrs

Outline:

<p>1 Introduction to CNC</p> <ul style="list-style-type: none"> What can I make with a CNC? What is CNC? CAD - Computer Aided Design CAM - Computer Aided Manufacturing CNC - Machining the Part CNC Control <p>2 Coordinate Systems</p> <ul style="list-style-type: none"> Coordinate Systems Coordinate Measurement Origins and Axes Three-Dimensional Measurement Coordinates and CNC Programming Editing CNC Programs The Right-Hand Rule <p>3 Using the CNC Router Safely</p> <ul style="list-style-type: none"> Introduction Machining Safety 	<p>4 Setup and Tooling</p> <ul style="list-style-type: none"> Setting Up the Router Hardware Fixtures and Spoilboards Dust Collection Workholding Installing the Material Tooling Chipload Depth of Cut Installing the Tool <p>5 Setting The Origin</p> <ul style="list-style-type: none"> Setting the Work Origin CNC Control <p>6 Running a Sample Program</p> <ul style="list-style-type: none"> Setting up the CNC Router Cutting the Part Loading the G-Code Testing the Program Running the Program <p>7 CNC Code Reference</p>
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PROJECT 1: 3D SIGN

- Duration: 2 Hrs

Outline:

<p>1 Drawing with VCarve PRO</p> <ul style="list-style-type: none">Creating a drawing fileThe Drawing panelDrawing the Outer borderDrawing the borderAdding textAligning textAdding 3D Objects <p>2 Setting up Toolpaths</p> <ul style="list-style-type: none">Setting up the MaterialSetting up the ToolAdding TabsAdding TabsPreviewing the Toolpath <p>3 Setting up the Toolpaths</p> <ul style="list-style-type: none">Creating the Pocket ToolpathCreating the 3D Finishing ToolpathCreating the Border ToolpathSaving Toolpaths for CNC	<p>4 Setting up the CNC Router</p> <ul style="list-style-type: none">Setting up the CNC RouterLoading the G-CodePreparing for the Dry RunDry Run the Program <p>5 Cutting the Part</p> <ul style="list-style-type: none">Cutting the PocketCutting the 3D PathsCutting the Outside BorderRemoving the PartFinishing the Part
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PROJECT 2: CLOCK

- Duration: 2 hrs

Outline:

<p>1 Creating a drawing file</p> <ul style="list-style-type: none"> Setting up the Drawing Drawing the Clock Face Drawing the Interior Art Shaping the Base of the Clock Face Drawing the Base <p>2 Creating and Saving Toolpaths</p> <ul style="list-style-type: none"> Creating the Toolpaths Setting up the Tool 	<p>3 Setting up the CNC Router</p> <ul style="list-style-type: none"> Setting up the CNC Router Loading the G-Code Preparing for the Dry Run Dry Run the Program <p>4 Cutting the Part</p> <ul style="list-style-type: none"> Cutting the Pocket Engraving Text Cutting the Outside Borders Removing the Part Assembling the Clock Finishing the Part
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PROJECT 3: MAKERS LAB SIGN

- Duration: 3 hrs

Outline:

<p>1 Importing Artwork</p> <ul style="list-style-type: none"> Importing Artwork Setting up the file <p>2 Working with Vectors</p> <ul style="list-style-type: none"> Working with Vectors Setting up the Tool <p>3 Creating the Toolpaths</p> <ul style="list-style-type: none"> Creating the Toolpaths Setting up an Engraving Tool Adding Color Previewing the Final Cut Saving Toolpaths for CNC 	<p>4 Cutting the Part</p> <ul style="list-style-type: none"> Setting up the CNC Router Loading the G-Code Preparing for the Dry Run Dry Run the Program Cutting the Part Cutting the Outside Border Finishing the Part Removing the Part
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PROJECT 4: 3D ROBOT

- Duration: 1 hr

Outline:

Creating a Drawing Importing the 3D Object Drawing Vectors Creating Toolpaths Saving Toolpaths for CNC Cutting the Part Finishing the Part
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PROJECT 5: MODEL DINOSAUR

- Duration: 2 hrs

Outline:

Creating a Model Dinosaur 3D Model Dinosaur Creating a Drawing Importing CAD Drawings Working with the CAD Drawings Drawing Assembly Slots	Laying Out the Drawing Creating Toolpaths Drawing Assembly Slots Loading the Toolpaths in Mach3 CNC Setting up the CNC Router Cutting the Part Finishing the Part
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