

## Why CNC at WPI?

*Manufacturing has a strong presence in New England and WPI's Manufacturing Program continues this tradition with our advanced CNC machining laboratories. Our accelerated courses give participants a opportunity to go from a CAD design to CAM software to a finished part within a few hours.*



**Student loading program to run on SL20 Lathe.**

## Industrial Partners

Gibbs and Associates  
<http://www.gjbbscam.com>

Haas Automation, Inc.  
<http://www.haascnc.com>

Kennametal, Inc.  
<http://www.kennametal.com>



## W.P.I. Manufacturing Engineering

100 Institute Road  
Worcester, MA  
01609

E-mail: [elwood@wpi.edu](mailto:elwood@wpi.edu)  
Fax: 508-831-5673



A cut above the  
rest. . .

## Accelerated CNC Machining @ WPI



---

W.P.I.  
Manufacturing Engineering

## 4 Different Course Levels



**Computer facilities featuring Dell Workstations**

In the 1980's Worcester Polytechnic Institute (WPI), became one of the first schools in the country to offer an ABET accredited B.S. degree in Manufacturing Engineering. Now the Manufacturing Engineering program at WPI is proud to offer training to industry professionals in the area of CNC manufacturing.

Through the efforts of the forward thinking machine tool manufacturer, Haas Automation, WPI has arguably the best CNC machining teaching laboratories across the country.

It is in these laboratories that course participants will receive application-based education by being personally taken through the CNC manufacturing process.

Oriented towards practicing engineers or those with equivalent experience, the courses are separated into four different levels with each level building on material taught in earlier levels. Those who successfully complete each level will be issued a certificate.

The four courses, when taken in series, will give course participants the basic skill sets required to operate a CNC machine, knowledge of tooling selection, fixturing, and the limitations of the process. Personalized courses will also be available upon request.

### Level 1: 2D Simple

Level 1 introduces the user to the CNC machinery and introduces cutting tools. The user then completes a project importing 2-dimensional geometry into the CAM software to create a toolpath and G-Code, which the user then executes on the machining centers to create a part.

### Level 2: 2D Projected

Level 2 teaches the user how to extract feature geometry from a solid model. The geometry is then patched as required and used to create the toolpath. The user will then go on to cut the part on the CNC machine.

### Level 3: 3D Surfaces

Level 3 introduces the user to bull-nose cutters and ball mills used for cutting complex surfaces. The surfaces can be created from 2D CAD or imported from solid models. Finally, the toolpath will be converted to G-Code and executed on the machines.

### Level 4: CNC Optimization

Level 4 builds knowledge of cutter selection, speed, and feed calculation. Toolpath optimization and fixturing options will also be covered. Level 4 gives the user enough understanding to select tools and operations for a CNC machining process.



**A sampling of some of the varieties of solid and insert cutting tools available.**

### Course Sign-Up

(Please Fax or Mail form to the address provided)

Sign up for:	Price
<input type="checkbox"/> CNC Level 1	\$400.00
<input type="checkbox"/> CNC Level 2	\$400.00
<input type="checkbox"/> CNC Level 3	\$400.00
<input type="checkbox"/> CNC Level 4	\$400.00

\*Please email for pricing and availability of personalized courses (elwood@wpi.edu).

Subtotal: \_\_\_\_\_

Tax: \_\_\_\_\_

Total: \_\_\_\_\_

Schedule available online at:  
<http://www.wpi.edu/Academics/Depts/ME/MFE/Summer/>

Name \_\_\_\_\_

Address \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Phone \_\_\_\_\_

Check (Please make checks payable to WPI)

Discover

Visa

MasterCard

American Express

Credit Card # \_\_\_\_\_ Exp. date \_\_\_\_\_

Signature \_\_\_\_\_

Name (Exactly as it appears on card) \_\_\_\_\_



**W.P.I.  
 Manufacturing Engineering**

100 Institute Road  
 Worcester, MA  
 01609

E-mail: elwood@wpi.edu  
 Fax: 508-831-5673