



The Foundation of the Fabricators & Manufacturers Association, Intl.

YORK TECHNICAL COLLEGE Presents METAL MASTERS SUMMER CAMP

Sponsored by Fabricators & Manufacturers Association, Intl.
And the John Ratzenberger NBTMA Foundation
(YES, John played Cliff on the T.V. series CHEERS)
Hosted by York Technical College

- *Duration- 1 week
- *Date July 20 through 24, 2009
- *Lunch will be provided to the students
- *A field trip will be taken on Friday to one or two local manufacturing plants:
 - Tyco Electronics
 - ATS
 - Schaeffler
 - TMA
 - THINC
- Transportation for these field trips to be provided by YTC with Grant funding.
- *Age of “campers”: 12 to 16 years old
- *Hours of camp: 8:30 a.m. to 3:30 p.m.
- *Cost of camp: \$20 per “camper” (entry fee to cover cost of meals)
- *Camp size: 20 participants per camp session
- *Dress Code: See requirements for MTT students
- *Safety glasses to be provided by YTC
- *Tools, materials, and equipment to be provided by YTC
- *Projects to be completed: a. One hole paper punch or similar project
b. Stamp, polish, and engrave brass name tag with name on one side and camp logo with dates on second side
- *Campers responsible for transportation to YTC at start of day and home at end of day
- *Camps to be conducted by MTT faculty.
- *Objective: Expose students to skills needed to pursue a career in manufacturing. We will give the student a real world look at local manufacturing operations. We will give them a chance to make a multi-part mechanism using both manual and CNC machine shop equipment. The student will be introduced to CAD and CAM software. The student will then be able to take home a completed project that they made during the camp.
- *This week long camp session is open to students from Chester, Lancaster, and York Counties
- *Camps filled on a first come, first served basis.

YORK TECHNICAL COLLEGE 

METAL MASTERS Summer Training Camp:

Monday

8:30 – 9:00	Check in, pick up camp materials, introductions, and discuss agenda
9:00-9:30	Purpose of the camp, introduce machining and projects
9:30-9:45	Break
9:45-10:30	Stamp “dog tags” and discuss the Stamping Operation along with Tool and Die Making
10:30-10:45	Break
10:45-11:30	Introduction to CAD / CAM
11:30-12:00	Lunch in IMP
12:00-12:45	CAD work to customize student’s dog tag
12:45-1:00	Break
1:00-1:45	Complete CAD / CAM work on customized dog tag
1:45-2:00	Break
2:00-3:30	Machine/Engrave dog tags on V.M.C.

Tuesday

8:30 – 9:00	Questions and Answers to Review Monday’s activities
9:00-9:30	Introduce prints for Single Hole Paper Punch and show completed model, discuss skills of print reading
9:30-9:45	Break
9:45-10:30	Cut plunger for single hole punch on abrasive saw from drill rod, demo proper use of abrasive saw
10:30-10:45	Break
10:45-11:30	Grind 5 degree shear angle on end of plunger, demo proper use of surface grinder and part holding fixture
11:30-12:00	Lunch in IMP
12:00-12:45	Knurl end of drill rod end, demo proper use of manual lathe
12:45-1:00	Break
1:00-1:45	Complete knurling of drill rod end and drill cross hole in plunger, demo proper use of manual milling machine
1:45-2:00	Break
2:00-3:30	CNC turn plunger washer on Emco Maier CNC Turning Centers, discuss proper use of CNC equipment and machine capabilities

Wednesday

8:30 – 9:00	Questions and Answers to Review Tuesday’s activities
9:00-9:30	Finish turning plunger washers
9:30-9:45	Break
9:45-10:30	Wind plunger springs on spring winder, demo proper use of spring winder
10:30-10:45	Break
10:45-11:30	Cut springs to proper length and inspect
11:30-12:00	Lunch in IMP

Wednesday

12:00-12:45 Machine base on Okuma VMC, and discuss CNC Milling and proper use of machine
12:45-1:00 Break
1:00-1:45 Complete machining of base parts
1:45-2:00 Break
2:00-3:30 Begin machining Body of Single Hole Paper Punch on Okuma VMC, discuss multiple set-ups required to machine entire part

Thursday

8:30 – 9:00 Questions and Answers to Review Wednesday's activities
9:00-9:30 Continue machining Body of Single Hole Paper Punch
9:30-9:45 Break
9:45-10:30 Deburr and finish all machined parts
10:30-10:45 Break
10:45-11:30 Assemble Base and Body of Single Hole Paper Punch
11:30-12:00 Lunch in IMP
12:00-12:45 Begin reaming Base and Body of Single Hole Paper Punch for plunger alignment and installation
12:45-1:00 Break
1:00-1:45 Continue reaming Base and Body of Single Hole Paper Punch
1:45-2:00 Break
2:00-3:30 Assemble Plunger and Head on arbor press, discuss proper use of holding fixture and arbor press

Friday

8:30-11:30 Plant Tour
11:30-12:00 Return to YTC
12:00-12:30 Lunch
12:30-1:45 Final Assembly of Single Hole Paper Punch
1:45-2:00 Break
2:00-3:00 Testing of completed Single Hole Paper Punch
3:00-3:30 Suggestions, comments, highlights, etc. of Manufacturing Summer Camp

MTT Department DRESS CODE:

In order to assure your safety and protect you from accidental injury, we request that you read and adhere to the following DRESS CODE while in the MTT Department:

NO Open Toe Shoes are allowed in the Machine Shop.

NO Loose or Flowing Clothing is allowed in the Machine Shop.

Eye Protection MUST be worn while in the Machine Shop. Eye Protection is not required as long as you remain within the Yellow Aisle Boundaries. See posted IET Safety Glass Policy for more specific information regarding Safety Glasses.

Loose Jewelry should be removed before entering the Machine Shop.

Shirts must be tucked into your pants while in the Machine Shop. No **Short Pants** are to be worn while in the Machine Shop.