

# Modesto Junior College

## Machine Tool Technology Advisory Committee Meeting Minutes

### April 4th, 2017

**Meeting called to order at 8:20 am.**

**In Attendance:** Tom Brumley (Grace Davis High School), Kevin Walker (Gallo), Dennis Lucas (G3 Industries), John Beam (Racor), Jim Selway (CNC Solutions), Robert Bates (Lawrence Livermore Laboratories), Dave Valtierra (Walter Tools), Jeff Weaver (MJC)

**Approval of Minutes:** Motion made and seconded by Jim Selway. Minutes approved.

**Old Business: None**

**New Business:**

#### A. Report on the status of program at Davis High School

Tom Brumley reported that he was continuing to teach 2 regular wood shop classes, 1 ag carpentry class, and 2 metals classes. Moving forward his classes are now being taught under the AG umbrella. His shop has added an additional Tormach Mill and Tormach Lathe as well as two new Saw Stop table saws.

An open discussion continued about current trends in high schools and the exposure that students have of our trade. From the conversations it seems that schools around the state are starting to refocus resources in opening shop programs from the Bay Area to Los Angeles. These patterns have not yet reached the central valley.

#### B. MJC enrollment report by Randy Thoe:

Course	Course Description	Spring 2017	Fall 2016	Spring 2016
Mach - 211D	Machine Tool Tech	11	12	9
Mach - 211 E	Machine Tool Tech	9	7	9
Mach - 212 E	Machine Tool Tech 2		7	
Mach - 213	Machine Tool Tech 3	5		3
Mach - 222	CNC Operations	8	7	12
Mach - 218	CNC Lathe Programming	7	9	11
Mach - 219	CNC Mill Programming	12	9	7
Mach - 301	Machine Shop 1	16	16	15
Mach - 302	Machine Shop 2	10		8
Mach - 303	Machine Shop 3		4	6
Mach - 395	Advanced Shop Lab	2	4	7
Mach - 357	Blueprint Reading			
Mach - 220	Computer Aided Manufacturing			
Mach - 223	Advanced CNC Operations			
<b>Totals</b>		<b>80</b>	<b>75</b>	<b>87</b>

#### C. Summer Class Schedule 2017 for MACH:

-MACH 301 will run for 10 weeks from 06/13/17-08/17/17. This is an introductory class to machining.

## **D. Fall Class Schedule 2017 for MACH:**

MACH-211DE- Machine Tool Tech, Instructor Randy Thoe  
MACH-212E- Machine Tool Tech 2, Instructor Randy Thoe  
MACH-357- Blueprint Reading, Instructor Randy Thoe  
MACH-220- CNC Machine Tool Programming, Instructor Randy Thoe  
MACH-301- Machine Shop 1, Guest Lecturer Robert Bates  
MACH-222- CNC Operations, Instructor Ken Morrison

## **E. Curriculum Update Spring 2017**

### **a. Current**

- Degrees** (Machine Tool Technology)
- Certificates** (Machine Tool Technology 1, Maintenance Machinist 2)
- Skills Recognition** (CNC Operator, CNC Programmer, Maintenance Machinist 1)

### **b. Proposed Changes (Open discussion)**

Course numbers have been changed to organize them in a more sequential order. The three manual courses will now be MACH 200, MACH 201, MACH 202. The CNC courses will now be MACH 205, MACH 206, MACH 207, MACH 208, and MACH 209. Both the Blueprint (MACH 357) and Open Lab classes (MACH 395) will stay the same. Some of the course names have also been changed to reflect better on the content of the class. For example: MACH 200 will change from Machine Tool Tech 1 to Intro to Manual Machining.

- Degrees** (Machine Tool Technology)
- Certificates** (Machine Tool Technology, Maintenance Machinist)
- Skills Recognition** (Basic Machining, Maintenance Operator, CNC Machinist)

Effort will be put into having a revolving schedule where all Machine Tool Classes will be offered 1 time per year to shorten the amount of time for students to complete their pathways.

### **c. Crosswalk to new course names**

- Handout

All courses that previously existed will remain intact with a new course number with the exception of Mach 301, Mach 302, and Mach 303. These courses will be deactivated and will now be taught under Mach 200, Mach 201, and Mach 202. This offers students the versatility to enroll in a morning series of classes, or an evening series focused specifically on manual machining.

### **d. Vote to approve**

- New Curriculum (Changes to take place over summer 2018)

The committee voted unanimously to approve the proposed changes of the new class numbers and updates to the Degrees, Certificates, and Skills Recognitions.

- Prerequisites

The committee also voted unanimously to continue with the prerequisites for Mach 201, Mach 202, Mach 395, and Mach 209. The committee agreed that the content in each of these classes taught skills that needed to be proven before continuing on to the next sequence of classes.

## **F. Equipment and Tooling Needs**

### **a. Committee input**

#### **1. Tooling**

This specific area was curbed until a later date, as equipment needs are required first in order to utilize new tooling technologies effectively.

#### **2. Equipment**

This is an area of concern involving some of the CNC turning and Milling Equipment. The current processor speeds of these machines is limited in the fact that they can't keep up with new programming methods. This is specifically a concern on our VF0 Machining Centers when utilizing Mastercam.

### 3. Facility

The committee agrees that the Machine Tool Laboratory is limited on space. There are already machines in storage that cannot be used due to this lack of square footage. It was proposed to the committee that space be created in order to move the CNC's into a separate laboratory and add machinery to the current manual machine shop, which would allow the program to increase enrollment.

### 4. CNC Simulation Software

Software to simulate CNC programs has been a topic of recent discussion. Currently the CNC programming class will utilize Haas simulation controls to prove a handwritten CNC program. This method has many limitations due to the display that is used. Software would allow a student to test run a program on a 3D simulation of the exact machine the code is written for. This would catch many errors that show up on the machine tool eliminating potential crashes.

### 5. New Technology

Additive manufacturing is an area that has seen continued progression over the last few years. The committee believes this is something to begin looking at, but also believes we should focus first on some of the other areas of concern involving machinery and space.

#### b. Strong Workforce Initiative

The Strong Workforce Initiative was presented to the committee as an avenue to acquire some of the needs listed above. The Machine Tool Program will look at writing a proposal, during the second wave of funds, to fulfill equipment and space needs contributing to growth in our program.

## **G. Equipment Report**

- a. Spindle issues on the left Haas VF0 (Belt)
- b. Turnmaster 13" manual lathe has rack issues on carriage. (Broken Teeth)
- c. Leblond Lathe #5 manual lathe has brake issues and broken gibb on compound.

None of the issues presented above are major concerns right now, as the machines are still operating, and will be repaired over the summer.

## **H. Other Business**

- a. Randy Thoe is actively training on Mastercam to prep for fall course. Training from Payton Group and additional help from Joey Mac Isaac (San Joaquin Delta College)
- b. Perkins request for additional live tooling and static holders for Doosan Lathe has been processed.
- c. Funds to update Ansel Adams 102 with an interactive screen for teaching Mastercam is scheduled to happen over the summer.
- d. Brian Turner has been added as a Lab Aid for the Machine Tool Department. He is a part time employee with a contract for 19 hours per week.

## **I. Action Items**

- a. Create a flyer for Machine Tool Program to advertise Degrees, Certificates, Skills Recognitions, and general classes offered for industry use. This document can be handed out to local industry to aid in the increase of enrollment in the program.
- b. Write up a proposal for the Strong Workforce Initiative to update and expand the Machine Tool Program.