Agenda for Machine Tool Advisory meeting for 10/16/09

1. Call to order- Introductions- Ray
2. New Business
    a. NIMS Level 1 Accreditation Review
        i. Review NIMS packet (White binder)
        ii. Need of a sponsor
        iii. Importance of advisory committee. A must have.
            1. Increasing Industry participation
            2. Involving ATMA
            3. Committee is part of the accreditation process
        iv. Setting up the Metalworking Technical committee.
            1. What is a MET-TEC
            2. Need an industry member volunteer MET-TEC
        v. OSHA review
            1. Machine guarding. What's needed, what's not?
            2. Electrical panic switches on each machine, are the needed?
    b. Miscellaneous equipment list review (attached)
    c. 5 year plan and equipment request
        i. Year 08-09 (last year)
            1. 5 classes offered, only beginning level
            2. New equipment purchased
                a. 1 ACER Bridgeport style mill w/ DRO
                b. 2 Pedestal grinders w/ vacuum
                c. Master tool set
        ii. Year 09-10
            1. 4 beginning classes and 1 intermediate class offered
            2. New equipment
                a. 2 ACER Bridgeport style mill w/ DRO
                b. 1 Clausing Lathe 15"
                c. 1 Harig surface grinder
                d. 1 Carbide tool grinder
                e. Some carbide tooling
                f. Some inspection equipment (list included, see attached.)
                g. Request for special JTED funding for 5 lathes
                h. Request for more floor space
            3. NIMS accreditation for:

a. Job planning, bench work, & layout
b. Materials, & safety
c. Turning between centers
d. Turning chucking
e. Milling

iii. Year 10-11
1. 4 beginning level classes, Combination intermediate and advance.
2. New equipment
a. 2 ACER Bridgeport style mill w/ DRO
b. 5 lathes 13” or bigger
c. 1 High precision Hardinge clone
d. 2 surface grinders
e. Carbide tooling
3. NIMS accreditation for:
a. Surface grinding
b. Drill press
4. Add 2nd teacher for Solid works, CAD, CAM

iv. Year 11-12
1. 10 to 20 Haas simulators

v. Year 12-13
1. Haas mill TM1 or TM 2
2. Haas GT 10 lathe

3. Old business
a. Skills USA
4. THMS Shop Review tour
6. Next meeting

Miscellaneous equipment list to be reviewed for approval.

Line item	quantity	Dist	What
1.	5000-3015	2ea.	4 pc edge center finder
2.	2459-0125	2ea	Wiggler set
3.	2458-8350	1ea	Electronic edge finder
4.	2172-0028	1ea	Sine bar set
5.	2154-7190	1ea	Universal angle block set
6.	5000-2900	1ea	3 set angle parallel set
7.	2159-0595	6 ea	parallel set ½"
8.	2158-0590	4ea	parallel set 1/4"
9.	2159-0255	1ea	parallel set thin tin coated
10.	2225-7081	2ea	Gauge block set
11.	2170-2414	6ea	18x24 surface plate
12.	2170-0472	6ea	Stand for 18x24 surface plate
13.	2195-9304	4ea	Mitutoyo dial height gauge
14.	2256-3421	1ea	Starrett Digital height gauge
15.	2243-3230	2ea	Fowler digital height gauge
16.	2175-1800	6ea	Steel square set
17.	2216-4980	1ea	Fowler Bevel protractor
18.	2215-9150	2ea	Combination sq. set
19.	2179-0510	30ea	Steel rule
20.	5000-3076	10ea	Hermaphrodite caliper set
21.	2200-1946	4ea	divider 6"
22.	2200-1952	1ea	divider 12"
23.	5000-3005	3ea	Drill gauge set
24.	2176-4920	40ea	6" rule
25.	2189-6000	1ea	angle gauge set

26.	2489-7300	1ea	Radius gauge set
27.	2470-4770	2ea	Thread gauge
28.	2470-4156	2ea	Metric thread gauge
29.	2281-2071	6ea	Machinery handbook
30.	2281-2072	1ea	Machinery handbook guide
31.	2220-4085	1ea	Bore Gauge
32.	2468-1920	3ea	Surface roughness standard set
33.	5000-3008	2ea	Gauge set, ball, telescoping
34.	2261-0700	1ea	Holmike set
35.	2261-0710	1ea	Holmike set
36.	2261-0720	1ea	Holmike set
37.	2261-0730	1ea	Holmike set
38.	2186-8460	1ea	spindle square
39.	2185-1130	1ea	Coaxial indicator
40.	2219-7050	2ea	surface gage magnetic base
41.	2219-7010	2ea	surface gage
42.	2202-0060	1ea	Micrometer set
43.	2239-1001	40ea	Fowler 1” micrometer
44.	2238-5927	1ea	Metric micrometer set
45.	2182-2048	4ea	Thread measuring wires
46.	2235-9304	2ea	Depth micrometer
47.	2235-5160	1ea	Fowler depth gage
48.	2178-5070	2ea	Drill gage
49.	2467-6037	10ea	Center gage
50.	2188-1250	8ea	Dial indicator
51.	2172-4900	2ea	Dial indicator w/ mag base

52.	2425-7140	35ea	Jacobs ball bearing chuck
53.	2531-6026	28ea	Jacobs taper shank #2MT 3jt
54.	2531-6082	7ea	R8 shank
55.	2431-3003	20ea	Jacobs chuck keys
56.	2571-3075	1ea	Boring head
57.	2496-1120	4ea	Collet rack
58.	2490-3627	2ea	R8 collet set
59.	2490-3606	4ea	R8 collet set
60.	2489-9924	8ea	3/8 R8 collet
61.	2489-9932	8ea	½ R8 collet
62.	2198-2407	1ea	Vernier caliper
63.	2217-4124	30ea	Electronic caliper
64.	2256-7420	4ea	Starret electronic caliper
65.	2064-4019	10ea	Deburring set
66.	2510-4615	3ea	Knurling tool
67.	2336-0622	2ea	Letter stamps
68.	2336-0624	2ea	Letter stamps
69.	2336-0625	2ea	Letter stamps
70.	2555-1833	1ea	Deluxe radius cutter
71.	1153-2002	1ea	#2 MT reamer
72.	1153-2003	1ea	#3MT reamer

Minutes from meeting on August 4th, 2009 at THMS

1. Call to order: Introductions
    a. Ray Wiggins THMS machine tool teacher
    b. Debbie Leonetti, TUSD CTE
    c. Brian Forstall, TUSD CTE
    d. Kathy Prather, TUSD CTE Director
    e. Tracy Rexroat, ADE
    f. Terry Forster, PCC Industrial Technology, Dean
    g. Cesar Gutierrez, Palo Verde HS
    h. Jim Farlee, Palo Verde HS
2. New Business
    a. Ray went through the THMS machine tool technology plan (see attached). Ray explained the reason for doing the plan and getting accredited with NIMS. Terry brought up some concerns with some of the equipment being purchased in regards to the lathe and surface grinder having digital read outs installed. Ray explained that the equipment was already ordered and it was too late to make any changes. All future purchases will be reviewed by the advisory committee before purchase.
    b. Cesar talked about what he was doing with the program at Palo Verde high School. Ray had some concerns that a full time teacher is needed.
3. THMS facility tour: Ray took Kathy and Terry to tour the facility.

Draft Proposal for THMS Machine tool technology plan 8/4/09

Objective: Proposal to make the Tucson High School Machine tool technology the premiere Pima JTED machine tool program.

History synopsis of machine tool technology in TUSD: At one time, every one of the nine high schools in the Tucson Unified School District had a machine tool technology program of some sort. Some of the other districts had them as well. Starting in the late 1970's TUSD started to close the doors on the machine tool programs when the instructors left or retired. At one point in the late 1980's, only Palo Verde High School was the only one left. The long term instructor at PVHS retired in 1999 and there has been numerous instructors go through there since, and some were unqualified. This has caused the program to be pilfered and fall into a state of disrepair. The drafting instructor that is there now is trying to put something together to teach one class.
In 1994, a program was started back up at Tucson High School using some surplus machines that came out of closed programs. The program was mothballed in 2004 since the instructor was teaching two other subject areas. The THS program has since reopened in 2008 as a full time program with five beginning level classes. This year, there will be an intermediate or 2nd year class added. The program now has 45 large pieces of machinery. Tucson High school is currently the only viable full time machine tool technology program in Pima County.

Scope:

1. **NIMS:** The instructor and the program will get accredited with NIMS (National Institute for metal Working Skills) Level 1 machining. The accreditation will do the following:

- Prove to the community that the instructor and program meets national industry standards and the investment in the program is worthwhile.
- Align with ADE state standards since they will be based on NIMS.
- Allow the students to be competitive in the Skills USA competitions since they use NIMS standards and is sponsored by NIMS.
- Some post secondary schools such as Gateway Community college and ASU recognize NIMS, and a student can get college credit if student has certification.
- Allow students to get a nationally recognized industry certificate in high school.
- **Prerequisites for Accreditation**
- **Earning NIMS Accreditation**
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- • All NIMS skill standards must be incorporated into the training program's curriculum and program evaluation.

- All trainees must know about the NIMS performance requirements and the NIMS credentialing program opportunities.

- The Advisory Committee must be involved with the Self Study process.

- The Advisory Committee members must review the Performance Requirements (prints and/or CARs) and the sample tests.

- All Advisory Committee members must have their own copies of the Evaluators Guide(s).

- The Advisory Committee must be knowledgeable about the use of NIMS credentials in recruiting and hiring.

- The program must have the support of the administration.

- There must be evidence of an active credentialing program.

- Instructors must have earned NIMS credentials.

- All instructors must have a clear understanding of the credentialing process, including the role of the MET-TEC Committee.

- The facility must meet the applicable OSHA requirements

Level 1 NIMS credentials

- Measurement, materials, and safety
- Job planning, layout, and bench work
- Manual Milling
- Manual turning, between centers
- Manual turning, chucking
- Drill Press
- Surface grinding
- CNC turning
- CNC Milling

Only four of these modules, including the first two, are needed for accreditation. THS would work towards all of them except CNC. CNC can be included later if equipment is available.

2. **Post Secondary training:** Work closely with Pima Community College machine tool technology and have articulation agreement in place for our intermediate and advanced classes.

3. **Current facility and equipment:** Most of the current equipment is older equipment that has been in the district for years. The equipment still works and is great for beginning level students.

i. Existing equipment:

a. 32 10” lathes
b. 3 13” lathes
c. 1 14” lathe
d. 8 Milling machines
e. 2 Surface grinders
f. 2 heat treatment ovens
g. 2 pedestal grinders
h. 1 14” cold saw
i. 1 14” vertical band saw
j. 1 Horizontal band saw
k. 2 Buffers

4. **Needed Space and Equipment:** More room space is needed to handle the necessary equipment for the intermediate and advanced level classes. This can be achieved by moving the zerox room to a new location. **The new space will be used to accommodate new machinery for the intermediate and advanced level classes to comply with the precision requirements for NIMS and Pima College articulation.**

New equipment needs:

- 6 new mills with DRO's
- 8 new lathes with DRO's that are carbide tool capable
- 2 new surface grinders with DRO's
- Carbide tool grinder
- Inspection equipment needed (Build inspection clean room in zerox storage room) Surface plates, gauges, and other measuring equipment. CMM?
- CNC can be considered if need be. HAAS simulators with a mill and a lathe. No table top crap.
- Other facility needs
    ii. Fire Exit door to parking lot $1,500.00
    iii. Bay Door installed $5,000.00
    iv. Wall off welding shop $1,000.00

5**. Skills USA Contest coverage**

Area	Skill Area	Possible	Lowest	Highest	Average	Avg %	Score	Score %
Standard	Manual Engine Lathe Operation	125		120	75.676	61 %	15	12 %
Standard	Manual Milling Machine Operation	125		125	76.568	61 %	14	11 %
Standard	Manual Drillpress/Surface Grinder Operation	125		125	121.622	97 %	125	100 %
Standard	Process Control/ Precision Measurement	125		113	82.946	66 %	28	22 %
Standard	CNC Programming-Turning	125		115	34.581	28 %		0 %
Standard	CNC Programming - Milling	125		74	23.824	19 %		0 %
Standard	Professional Development	100		100	50.514	51 %	22	22 %

Standard	Related Knowledge Written Test	150		105	74.027	49 %	37	25 %
Penalty	Clothing	-50	-10		-.541	1 %		0 %
Penalty	Resume Penalty	-50				0 %		0 %
	Points Possible:	**1000**						

6. **Scope and Sequence of classes**

Year 1 Entry Level Class Freshman level Safety Career awareness and different opportunities Machine types Basic machining, mostly turning Measurement Basic blue print reading	

Year 2 Metals 1-2 Grades 10-12 NIMS Level1 · Measurement, materials, and safety · Job planning, bench work and layout · Turning in a chuck · Turning between centers .	GTM equivalent Math course Articulate w/ Pima for MAC 100 Skills USA

Articulate w/ Pima for MAC 100 and GTM 105 for a total of 6 cr. Hrs.

Year 3 Metals 3-4 NIMS Level1 · Vertical Milling · Drill press · Surface grinding · Inspection	Skills USA Articulate w/ Pima for MAC 110

Year 4 Metals 5-6 NIMS Level 1 · CNC Turning (Pima) Skills USA · CNC Milling (Pima) · Internship? (Pima)

Final Outcome Pass someNIMS Level 1 certification tests and performance projects. NIMS sets the standards for the ADE and Skills USA contests.

7. **Issues:** Need for strong advisory committee and also set up a metal working technical evaluation committee.

8. Potential need for another teacher to do solid works, master cam, and CNC.