Palomar College
Cabinet & Furniture Technology

CFT Advisory Committee Meeting

Meeting Minutes

March 13, 2018 1700-1900

Attendees:

Jon Stone	Chairman/Lead CFT Instructor
Jennifer Anderson	CFT Permanent Faculty
Adria Torrez	AWFS Director of Education
Adam Kessler	AWFS Manager of Education
Reuben Foat	Cerritos College Wood Mfg
Chris Geldart	San Marcos High School
Dale Pulver	Keepsake Creators
Dan Tresko	Tresko Custom Designs
Brenden Mathews	Foothill Cabinet works/Adjunct Faculty
Jerry Beaudry	CFT Adjunct Faculty (CNC)
Georg Kast	Instructional Support Assistant

I. **Welcome Overview**

Jack Stone kicked off the meeting stating the purpose as a discussion with local industry personnel engaged in CNC based manufacturing along with secondary school and college faculty representatives to review the current program status and to solicit recommendations for program changes and expansions to better serve our students in finding employment opportunities leading to self-sufficiency.

Introductions were made.

II. CFT Program Overview and Update

Jack Stone reviewed the highlights and issues in the program including the following topics:

- 8 Degree/Certificate programs available in the CFT program
- Completion rate for Certificates and Associate Degrees remains higher than the school average
- College administration is pushing to reduce the size of the CFT Program. This is driven by perceived low job opportunities as a result of existing (outdated) job classifications in labor market data (i.e., Saw Operator). **Ongoing reductions in the number and range of classes being offered will make it increasingly difficult for students to complete Certification/Degrees in 2 years.**

- Faculty positions remain predominantly adjunct with only two full time permanent teaching position and one classified position to support operations. External committee members considered this ratio inadequate to ensure desired program outcomes and a stable workforce.

Jack also elaborated on the learning methodology used in the Palomar College CFT Program as "Product based" manufacturing technology. This methodology teaches students to work a product from Design to Planning to Execution through a prototyping process before a final product is achieved. In addition, students learn leadership and people skills to provide them an entrepreneurial and client interface focus.

III. CFT Equipment and Facilities Update

Georg Kast provided a brief update on the status of the facilities and equipment in the CFT operations. Topics included:

- Overall satisfaction with the operation and maintenance of the NEW CFT 4' x 8' panel processing machine. This machine has been integrated into the cabinet making curriculum and is also used in the Machine Tool Joinery class (CFT 110/111).
- A successful summer class was held using the NEW router to produce 6 board foot chairs.
- As a result of 2017-2018 Perkins funding, the school was able to purchase two 2' x 3' CNC Routers from Laguna Tools. These machines are still being made; delivery is expected in early May. These routers represent a part of the phased approach to giving students a path for moving from less to more complex CNC machines as recommended in the last Advisory Committee meeting. The only remaining aspect of that approach is to have a laser engraver available for students.
- Without the support and dedication of CFT Program volunteers, the program could not be able to continue at the current level.
- Sawmill relocation has interrupted the operation of the Urban Lumber Program. The vacuum Kiln has been out of service due to a power supply issue. The CFT Department continues to coordinate with Palomar College departments, architects and engineers contracted to construct new storage facilities.

IV. Curriculum Rework

Changes in classes offered in the programs are being reviewed and updated. Jack discussed current activities associated with revising current curricula to integrate CAD software tools and CNC machining. Other educators on the Committee indicated the best results have been achieved when students can both design and cut their designs in the same class rather than having separate design and construction classes.

V. Workplace Trends

Industry representatives commented that the need for qualified workers capable of designing and operating computer aided manufacturing software and hardware continue to provide excellent, conventional job opportunities. Work is being done in the industry to re-characterize woodworking jobs to better reflect current manufacturing technologies thereby encouraging students to enter this career field. In another initiative, industry supporters have created a 46,000 sq-ft National Manufacturing Training Center in Colorado (https://themillco.org) for HS, College and veteran student training in modern woodworking manufacturing skills. Still other industry groups are working to enhance woodworking skills certifications similar to the 'ASE type' certification for the automotive industry.

Committee members indicated the additional need to train older students that are working to have a second or third, part time career. Committee members all agreed that ***America, and especially Southern California, is full of retirees that need to augment their income and that woodworking provides straight forward path to having earning potential.***

VI. Discussion

The purpose of this segment was to discuss the previous information and to develop recommendations for the Palomar College CFT Program.

From Workplace trends, the conversation quickly focused on ways to enhance employment opportunities for CFT graduates. Strategies for developing lists of local employers were discussed along with the need for getting employers familiar with the Palomar College CFT program and our students as well as introducing student to local employers. One suggestion was to have "Meet the Employer" events here at the school and also to participate in Manufacturing Day activities. The availability of resources seems to be the biggest hurtle here at Palomar.

While considerable discussion revolved around which hardware and which software would be best suited for the Palomar CFT Program, it was agreed by all that these aspects of the industry have changed significantly over the past several years and the continued change into the future would continue. Committee members agreed that **the best way to learn the tools and skills was a phased approach through a progression of complexity**. It is important to allow students to begin with simple designs and tools and to progress to more complicated designs and more complex equipment.

Both the high school and college representatives stated that their programs used an incremental approach to designing and building using Computer Aided Manufacturing tools. First designing simple projects using small, less complex CNC routers and CNC laser engravers, then moving to more complex projects using CNC panel processing and more capable (and complex) routing machines.

The consensus of the external committee members was that the program would be best served with additional basic CNC Routers (~$5000) and a moderately priced laser engraver ($35,000). These devices, in addition to providing a progressive path to industrial level machinery, also provide students with the skills and experience necessary to open small shop businesses with a minimal equipment investment.

Committee members also reiterated the need to get dedicated PCs for teaching the CFT oriented software to students. Cerritos College and San Marcos High School each have 25 PCs dedicated to computer Aided Manufacturing program in the woodshop.

VII. **Recommendations:**

1. Work to integrate additional CAD/CAM tools and incorporate them as quickly as possible into the curriculum for all appropriate classes. Software tools should kept to a minimum so that students can establish a higher level of expertise over the range of their coursework. 3 dimensional design as well as 2 dimensional design should be integrated into the curriculum. Software options discussed for the recommended equipment included Corel Draw, SolidWorks, Aspire/Vetric and Fusion 360.

2. Consider creating a separate certification/degree program emphasizing Computer Aided Manufacturing. Cerritos College has a successful 21 unit CNC Woodworking certification program.

3. Aggressively pursue participation in Manufacturing Day with local shops using CNC manufacturing technology.

4. Consider participating in Woodwork Career Alliance (WCA) certification of skills.

5. Continue to press for computers dedicated to CFT CNC software applications as well as a laser engraver to round out the incremental learning strategy.