

Advanced Manufacturing Advisory Meeting Minutes

Meeting Date: June 27, 2017

LBCC Programs:

Engineering Technology

Drafting – Mechanical

Machine Tool Technology

Metal Fabrication – Sheet Metal and Welding

Time and Place: 5:30PM at PCC GG238

Representative from Industry (voting members):

Donald Skinner, Director of Marketing, Visionaire Lighting

Kevin Warren, Foreman, R&J Sheet Metal

Ian Jackson, Manufacturing Engineer, Chemring Energetic Devices

Gregg Owens, Curriculum Developer, Jet Propulsion Laboratories

Community Representatives:

Steve Marsh, Instructor, LBUSD

LBSCC Representatives (non-voting):

Scott Fraser, DH, Trades

Ted Lambros, Adjunct Instructor, Drafting

Annie Mejia, Instructional Aide, Drafting/Architecture

Julie Schneider, Instructor, Welding

Tim Shoemaker, Instructor, Metal Fabrication

David Gonzales, Associate Dean, CTE

Damon Skinner, Instructor, Metal Fabrication

Lizzette Villegas, Manager, Student Services

Juan Flores-Zamora, Instructor, Engineering Tech, Machine Tool, Drafting

Call to Order

The Chair, Scott Fraser called the meeting to order at 5:45. Introductions were made and the agenda was reviewed.

Business Items

First order of business was that an industry co-chair was to be designated. Mr. Ian Jackson of Chemring Energetic Devices volunteered for the role. A call for objections was requested. There were no objections and Mr. Jackson was appointed co-chair with Scott Fraser.

1st order of business, Welding

General discussion: (Refer to page 3 of the presentation)

A review of last 2016 advisory was provided:

Reinstatement of the Welding program. Received unanimous approval at 2016 advisory

- a. Tim Shoemaker briefed the groups as follows
 - i. Documentation to reinstate mini certificates was complete and submitted
 - ii. 3 certificates were created:
 1. Shielded Metal Arc Welding
 2. Advanced Arc Welding
 3. Gas Tungsten Arc Welding
 - iii. The Curriculum Guide and course list for the program was distributed and reviewed by the advisory

Greg Owens – Computer driven manufacturing. There is no way to compete without a higher level that incorporates more. They have one individual to do multiple tasks, and they are responsible for a team. The skill set is wide set and broad, and everything is computer based.

Tim Shoemaker-We do have a welding program, and what makes us unique at LBCC we have metal fabrication, and a computer lab. We have new facilities, and new equipment. We have new machines and we are going in a new direction.

Greg Owens-Soldering and Crimping, what else does this a welder need, as allot of the welders are greying out or retiring. Do we need letters from industry?

David spoke about the third iteration of this particular motion and stated that at the last 2 advisory meetings, the welding program was approved for reinstatement.

Ian Jackson- Does LBCC have laser welding?

Julie Schneider-Laser welding and the problem from the technology is the scalability but we are highly interested in the technology. David G. The cost was prohibitive. Damon Skinner asked if industry needs it. Ian Jackson. We use and need laser welding. It's half the size a 3 by 5 table. Scott. We can look into laser welding as a new technology to adopt. David G. we can look up the labor data to confirm.

David G. discussed the curriculum guide for the new certificate and full associate's degree and presented labor market data on welding. EMSI/labor data report shows a median wage of

\$17.86 per hour for a welder. Starting wage is about \$14 per hour with the higher end at over \$22 per hour. There were close to 4,000 job postings in the LA County area with 19 programs, of which there are 16 community college based welding programs in LA/OC with the others being adult schools. There were 256 completions in LA/OC in 2015.

Kevin Warren motioned to approve the welding certificate and degree. Ian Jackson 2nd. High urgency to approve by motioned by Greg Owens to create the associate's degree. No one opposed.

Engineering Technology

David discusses the labor data (see page 4 of the presentation for what was presented), and we looked at various community colleges in the region (a hand-out of El Camino and Cerritos College programs was reviewed). The 2016 advisory approved last year to move forward with the program certificate. The program was created by Juan Flores

A review of last 2016 advisory was provided and discussion ensued (see page 4 of presentation). AEBG committee and AS requested reiteration of the 2016 approval so that the desires of the advisory committee are clear regarding certificate and/or degree.

1st motion to approve the Eng Tech program with high urgency made by Greg Owen, and 2nd by Kevin Warren. Other members agreed and a request to opposed was asked by Scott Fraser. No one opposed.

Machine Tool Technology

Scott discussed the Machine Tool Technology program (see page 5 of the presentation).

Discussion:

David Discussed the Labor Data and other Programs such as NMTA, maybe still don't produce the total number of students because David G described that NTMA does not have the physical capacity to produce the number of completers that the report reflected; that the number of completers shown for NTMA must be there North America numbers as they are located throughout the U.S. (See page 5 of the presentation for labor and program data that was presented.)

Will the region handle the new program at LBCC since NTMA has so many completers? We were able to prove with the data provided, that the colleges do not compete with NTMA as they have a tuition-based/high-cost model, where the colleges we have a semester based/low cost approach where student can complete with little to no debt. It was noted that NTMA has

closed their LA County location and the only location in the region is in Ontario. It is not likely that our potential students would travel to San Bernardino County daily for training. It was noted that the LAOCRC had approved the program and we were looking at the advisory group to provide local approval, if warranted.

New Courses and equipment were described to the group and it was mentioned that we have invested in the machine tools and metal fabrication equipment through grant funding, and we have the potential to grow.

The suggestion to add inspection courses or certificate to the program was made and discussions ensued.

Motion to approve machine tool certificate and degree programs was put forward by Ian Jackson and 2nd by Don Skinner. No one opposed and the motion was carried.

David G stated that the college may have additional funds available to procure more equipment for the program and ask the advisory if they would recommend that we move forward if the opportunity was presented. Discussion ensued. (See page 5 & 6 of presentation)

Steve M. What Greg is talking about is Radical Collaboration. Discussing all the various disciplines like Autodesk 360. Engineering Development and Design.

Greg O. Discusses how this type of experience can get people hired at JPL. What is cultural shock, traffic, etc. the advantage to locals.

Ian Jackson. Completed a similar program at community college, and the biggest problem is inspection. We need something to expand beyond basic inspection like CMM.

David G. We need a place to put a CMM, and we need a different process than a traditional machining program.

Ian Jackson. Lots of companies want to go into rapid prototyping.

Scott and David we have rapid prototyping in our curriculum.
The group agreed to discuss further at a future meeting.

Greg Owens. Move to purchase equipment necessary to expand technologies for the programs and to grow. 2nd by Kevin Warren. Motion carried (see page 5 of the presentation)

Drafting

Juan Flores-Discussed Mechanical Design and the redesign of the curriculum guide from 6 pages to 1 page. The CG was distributed along with the course outlines and discussions ensued.

David G. Continuous declining retention and completion with combined classes. 2nd level students declined due to change curriculum guide and break up the classes and offer limited combined classes. Discussed levels of success and continual improvements as long as we have progress. We will have the advanced courses, but will not be in the curriculum guide. We propose the change in the curriculum

Annie M. Asked about life long learners.

Scott F. Repeatability removed.

David G. discussed the differences from the old to the new curriculum guide.

Annie M. asked about pre-requisites. Add the intermediate and the advanced.

Greg O. Discussed improvement of skills and taking the more advanced classes. Suggested opening it up to giving people pre-requisite waivers.

Annie suggested the industry experience need a website in a formal way.

Greg O. Suggested that it would motivate students who have industry experience.

Scott Fraser. If people in industry who have drafting experience can get credit. We need to create a blurb or something that states it clearly in. Annie can work on the statement.

Ted Lambros-What do we call it? Drafting is outdated.

Annie M. VA students who want to take a class that is not on the curriculum guide. Draft 201 and Tec 60. Drafting 201 because it may need to be preliminary for even the basic classes. Drafting 60 can be a placeholder for a new software program.

David G. Drafting 201 is a survey class 4 unit. Recommended but not required.

Greg O. Computer based that we get to the easy answer.

David G. Software and model. It going to a more automated approach. They have to go the more automated and trying to get their supply base to use an

Ted Lambros. Drafting 201 and if we look at the actual numbers of Drafting 201. Seldom does the class gets cancelled.

David G. The class is a survey class and needs to be explored in that it needs to be re-evaluated.

Steve M. Discussed San Diego has a new test to figure out whether

Juan discussed the proposed new CG and the advisory agreed that the changes were desired and should be incorporated.

Ian Jackson proposed to adopt the new CG for Drafting. 2nd by Greg Owens. No one opposed and the motion was carried.

A request to inactivate the Drafting Experimental courses that are listed in the College Catalogue was made. Juan and Annie described the purpose of the experimental courses and David stated that the courses are no longer needed as they have been replaced by the Draft courses. **1st motion to inactivate was made by Greg Owen and 2nd by Donald Skinner to inactivate the Drafting Experimental Courses**

New Business- Noncredit

David G. Discussed Noncredit and Credit. (See page 8 of the presentation.)

FORK 801, Forklift- Credit course, to inactivate FORK 801 and a new noncredit course to be created to replace the credit course. Motion to approve inactivation and creation of noncredit course made by Kevin Warren and 2nd by Ian Jackson. Motion carried

Draft 210, 3D printing fundamentals. Inactivate Draft 210 and create a noncredit course motioned by Greg Owen and 2nd Ian Jackson. No one opposed and motion was carried.

Draft 211, Laser Cutting fundamentals. Inactivate Draft 211 and create a noncredit course. Motion to approve inactivation and creation of noncredit course made by Donald Skinner and 2nd by Ian Jackson. Motion carried

New noncredit OSHA 10 Safety Certifications course. Scott Fraser stated the need to create a noncredit general industry course. Greg Owen motioned for approval and Kevin Warren 2nd. Motion was carried.

Externship for full time and get more relevant skill. Paid for by Workforce development. If you hear of anything.

AMECH 50 inactivation. Request to inactivate AMECH 50, Machine Tool Operations course. The course was reviewed by the advisory and determined to be outdated. (See page 9 of the

presentation.) Ian J. asked if the new curriculum that was approved have conventional machines. Tim Shoemaker stated that the program does have conventional machine tools and students would be trained on there use. Motion by Donald Skinner to inactivate AMECH 50 and 2nd by Kevin Warren. Motion was carried with no one opposed.

The meeting was adjourned at approximately 7:45

Welcome!

Long Beach City College

Advanced Manufacturing

Engineering Technology • CADD • Machine Tool • Metal Fabrication • Welding



Industry Advisory

June 27, 2017



Advanced Manufacturing Industry Advisory

- Agenda
 - 5:30 to 5:50 - Dinner
 - 5:50 to 6:00 – Introductions
 - 6:00 to 6:30 – Update on new programs
 - 6:30 to 6:45 – Update on new equipment/training
 - 6:45 to 7:15 – Noncredit program, and new business
 - 7:15 to 7:30 – Closing statements and Adjourn



Follow-up from 2016 Advisory 4 Motions were Approved

- 1st Motion - Reinstate full welding program
 - Status
 - Documentation complete
 - Need approval to reiterate creation of certificate programs
 - Certificate Programs - Welding
 - Shielded Metal Arc Welding – 14 units
 - Advanced Arc Welding – 16 units
 - Gas Tungsten Arc Welding – 11 units
 - Review proposed Curriculum Guide (hand-out)

- Motion?
 - Certificate and Degree? Or certificate only
 - If degree, the department will need to configure the degree program and submit documentation – minimum 1 year for full approval



Follow-up from 2016 Advisory

Engineering Technology

- 2nd Motion – Create an Engineering Technology Program
 - Status
 - New courses created
 - Documentation for state approval in progress
 - Certificate and degree – 21.5 to 24 units
 - 13 required units
 - 8.5 to 11 elective units
 - Review proposed Curriculum Guide (hand-out)
 - 3 Pathways (concentrations) proposed
 - Electrical/Electronics Technology
 - Industrial/Mechanical Technology
 - Aerospace Technology
- Motion to Approve?
- Motion to pursue Pathways?

12/20/2017

Labor Data Summary

In LA County, there were 14,736 jobs in 2014, growing to 14,777 in 2017, a .3% increase. The median wage is \$28.68 per hour, with entry-level wages near \$17.80 per hour.

From 2013-14 through 2014-15, there were 126 annual completions from community colleges in the region. Supply and demand data indicates a regional needs and supports approval of new program in the region.



Follow-up from 2016 Advisory

Machine Tool Technology

- 3rd Motion – Create a CNC Machine Tool Technology Program
 - Status
 - New courses created
 - Documentation for state approval in progress
 - Certificate and degree – 18 units plus GE requirements
 - 18 required units
 - Review proposed Curriculum Guide (hand-out)
 - New Equipment and software
 - 4 HAAS machines
 - Immerse2Learn
 - NC Simul
 - Instructor training
- If opportunities for additional investment arise, does the advisory approve for additional equipment, training, software, tooling?

Labor Data Summary

In 2015, there were 16 regional programs with 843 annual completions. Of the 843 completions, 512 were from NTMA (National Tooling Manufacturers Association located in Santa Fe Springs), a proprietary trade school in the region with a \$14,500 tuition, book, and fee requirement. There were 11 regional community college programs with 81 completions in 2015. There were 1,245 job openings in LA County.





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Metal Fabrication and Welding Programs

- New Equipment
 - Trumpf – CNC Punch machine
 - Trumpf – CNC Press Brake
 - Lincoln Robotics Welding Machine
 - Casting Furnace
- Instructor Training
 - FANUC
 - Lincoln Electric
 - Trumpf
 - PLTW
 - If opportunities for additional investment arise, does the advisory approve for additional equipment, training, software, tooling?

12/20/2017





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Computer Aided Design & Drafting (Drafting)

New Program

- Changes to certificate/degree requirement

- Exiting program has 19 – 22 units required for basic certificate with additional courses for additional certificates in drafting
 - See CG handout

- New program adds machine technology courses

Motion to Approve?

12/20/2017

		Program of study leading to: Associate in Science (A.S.) Degree		
		UNITS	In Progress	Completed Grade
REQUIRED COURSES				
DRAFT 51A	Industrial Drafting I	3		
DRAFT 51B	Industrial Drafting II	3		
TEC 211	Print Reading for Industry	3		
DRAFT 60	Geometric Dimensioning and Tolerancing	3		
IN ADDITION, Complete 6-8 units of 1 (ONE) Software Option				
AutocAD	AutocAD I, Fundamentals	4		
DRAFT 202	AutocAD II, Advanced Concepts	4		
DRAFT 203				
Or				
CATIA	Introduction to CATIA	3		
DRAFT 220	Intermediate CATIA	3		
DRAFT 221				
Or				
SolidWorks	Introduction to SolidWorks Level 1	3		
Draft 230	Intermediate SolidWorks Level 2	3		
Draft 231				
	SUBTOTAL UNITS	18-20		
IN ADDITION, Complete 1 (ONE) course from the following courses:				
ELECT 230A	Robotics Technology – Design	3		
MACHT 50	Machine Tool Operations	3		
MTFAB 50	Introduction to Metalworking	4		
WELD 50	Introduction to Welding	4		
	SUBTOTAL UNITS	3-4		
	TOTAL UNITS	21-24		

For graduation with an Associate in Science (A.S.) Degree with a major in Mechanical Design:
 1. **Minimum Unit Requirements:** Any course that appears on a curriculum guide and the General Education Pattern (Plan A) may fulfill both major and general education requirements (Approved by College Curriculum Committee Spring 2012). For this degree, complete a minimum of 60 units in courses numbered 1-599. Please note that additional elective units may be required to meet this minimum based upon courses selected to fulfill General Education for the Associate Degree.

Mechanical Design Major 21-24 units
General Education/A.S. 19 units



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New Business - Noncredit

- **Noncredit**
 - Tuition free/No cost to the student
 - Except for materials fees and books
 - Students may repeat courses
 - Program award after completing courses
 - Employment opportunities
 - Compressed scheduling (< 6 months)
 - Prepares students to advance into credit courses
- Request motion to pursue noncredit courses as needed. Specific courses/programs will be presented to the advisory prior to approval

Motion to Approve?

- **New Noncredit Courses**
 - Forklift Safety – 18 hours
 - Inactivate FORK 801
 - 1 unit credit course
 - 3D Printing Fundamentals
 - Inactivate DRAFT 210
 - 1.5 unit credit course
 - Schedule cancellations for low enrollment
 - Laser Cutting Fundamentals
 - Inactivate Draft 211
 - 1.5 unit credit course
 - Schedule cancellations for low enrollment
 - OSHA 10 Safety Certifications
 - 10 hour class
 - Move to Non Credit

12/20/2017

Requests

- Summer Externship
 - FT Engineering Tech instructor assigned to your company during the summer
- Inactivate AMECH50 – Machine Tool Operations & Practices
 - Machine shop course in the conventional machining program that was deactivated
 - Course moved to Automotive Tech but course was not written for sector
 - Only 2 aged conventional mills in the program for this course
 - Course outline is obsolete and out of compliance
 - Not offered for several years
 - Request approval to inactivate

Motion to Approve?

New Business – Course Inactivations

- Inactivate Drafting “Experimental Courses”
 - These courses were created to develop the Drafting/CADD program courses and are no longer offered
 - Draft 298D – Intro to CATIA – Replaced by Draft 220
 - Draft 298E – Intermediate CATIA – Replaced by Draft 231
 - Draft 298F – Intro to SolidWorks – Replaced by Draft 230
 - Draft 298G – Intermediate SolidWorks – Replaced by Draft 231
 - Draft 298I – Advanced SolidWorks – Replaced by Draft 232

Motion to Approve?



Thank you!

12/20/2017