Long Beach City College - Program Review

Program Review 2013-14 - Metal Fabrication Technology

**PR 2A - Enrollment Data:**

The name of the Sheet Metal Program was changed to Metal Fabrication Technology in 2012-13 due to Department Reorganization and advice from the Sheet Metal Advisory Committee.

The student demand for the Program has increased steadily from the Fall 2010 to the Spring 2013. There have been setbacks due to the recession and budget cuts, but these were overcome through changes in class scheduling, redesigning the curriculum and certificates, improvements to the facility, modernizing the equipment, marketing the program and job placement.

The enrollment totals have increased from an annual enrollment of 283 students in 2010-11 to 311 enrolled in the 2012-13 academic years. The FTES during this same period increased from 22 FTES in the Fall 2010 to 39.29 FTES in the Fall of 2012. The WSCH has increased form 667 in the Fall of 2010 to 1265 in the Fall of 2012.

The Program Load increased from 436 in the Fall of 2010 to 593 in the Fall of 2012. The average CTE program load was 575 for the Fall 2012.

This data would indicate an increase in enrollment along with an increase in faculty efficiency.

**PR 2B - Achievement Data:**

In January, 2006, the first Sheet Metal Advisory Committee meeting took place. The members were from the Sheet Metal industry and the Southern California Sheet Metal Workers Joint Apprenticeship Training Committee (JATC). The curriculum was discussed, along with the need in securing some new equipment. The recommendations from the Sheet Metal Advisory Committee were very supportive and constructive. It was agreed that the Sheet Metal program should remove the existing 42 unit Sheet Metal certificate to two smaller 19 unit and 32-33 unit certificates.

The Southern California Sheet Metal Workers JATC also provided guidance for the LBCC students in the application, testing and interview process of becoming an indentured Sheet Metal Apprentice.

During the next couple of years, the new curriculum and certificates were developed. The new certificates were in place by the Fall 2009. The 10 unit block classes were removed and the curriculum was made up of 2 and 4 unit classes. This made it possible for a student to enroll in up 4-5 classes per semester. The change in certificate has had a direct impact on student retention.

The success rate of the Metal Fabrication Program (Sheet Metal) has averaged around 62% from Fall 2010 through Fall 2012. This is slightly lower than the collegewide success rate of 65%. The retention rate in the Metal Fabrication Program increased from 75% to 91% during this same period. The collegewide retention rate during this period averaged 84%.

In 2010-11, 3 students earned certificates or degrees. In 2012-13, 8 students were awarded a degree or certificate. This increase was due to better educating the student in the certificate/degree process.

The Metal Fabrication Technology program and the college as a whole has not done a very good job of tracking students job placement. The Program has a informal tracking method but is looking for a better way to track data. During the period from the Fall of 2010 through the Fall 2012, we were able to track over 50 students who have entered the workforce or are on a transfer track.

There have been 12 LBCC who have been indentured as Sheet Metal Apprentices into the Southern California Sheet Metal Apprenticeship program since 2009.

There are also many other students who we collected informal data. There has been approximately 30 students who have been employed in related metal fabrication fields. These areas include Metal Fabrication/Welding, Sheet Metal CNC Programmer, a Sheet Metal Shop Owner and a small number of nonunion Sheet Metal Workers. There were another 5 students who entered another area of construction.

The Metal Fabrication Program has also attracted several students who have enjoyed metal fabrication but have indicated that they have or intend to transfer to a 4 year university.

**PR 2C - HR (Staffing) Data:**

The Metal Fabrication Technology (Sheet Metal) Program from 2010-11 through 2012-13 has included one tenured faculty and 1-2 adjunct faculty members. The program has also been supported by a full time Instructional Aide.

In the Department Plans during this 3 year review cycle, the Program has continually requested another full time faculty member. This request has been supported by data that has indicated an increase in enrollment, FTES, WSCH and Program load.
In the Fall 2010 the Program had 1,530 FTEF and generated 22,22 FTES, with a program load of 436. In the Fall 2012 the FTEF had increased to 2,13 and the FTES to 39.29. The Program Load also increased to 593.13.

In Fall 2013, the Metal Fabrication Technology Program request for an additional Full Time Tenured Track hire was granted. The college is currently recruiting for this position. This additional faculty member will provide the human resources necessary to build the curriculum and support the program.

**PR 3A - SLO - summary of collected program data:**

**Program SLO #1:**
Perform a common sheet metal layout and fabrication project.

This SLO is assessed as a “Performance Test with a final product” with the Expectation that 70% of the Students will meet the Criteria.

This SLO was designed to assess the students ability to interpret a shop drawing, perform the layout on metal and complete the metal fabrication of the project uses the equipment available in the shop.

We used a small sample of students to evaluate and 60 % were able to score above an acceptable level.

**SLO #2:**
Perform common metal fabrication using power machinery to produce a fabrication project

This SLO is assessed as a “Performance Test with a final product” with the Expectation that 70% of the Students will meet the Criteria.

This SLO was designed to assess the students ability to interpret a shop drawing, and using various powered metal fabrication equipment, fabricate and assemble a finished and functional project.

We used a small sample of students to evaluate and 80 % were able to score above an acceptable level.

**SLO#3**
Demonstrate the ability to read and interpret construction blueprints.

This was a written final exam based on a complete set of construction drawings administered during the last week of semester. 76% of the students scored 70% or higher on the final written exam.

**PR 3B - SLO - uses in program improvement :**

Based on analysis of course and program SLO assessment: How are program-level and course-level SLOs being implemented, assessed, and used for program improvement?

Response:

The SLOs for both the program and the individual courses have been honed over the years to where they are now. Each instructor in the program maintains assessment results that are gathered and summarized at the end of each semester. The data collected as enabled the faculty to modify our delivery methods to help the students retain and use the knowledge needed to achieve their goals.

**PR 3C - SLO - action/ change based on results:**

Discuss how each action/change is based on ASLO results and how it will contribute to the improvement of the program.

Response:

We have been pleased with the results of our assessments. We have looked at the way we present information, what we present, and how we assess the outcomes.

We have taken specific actions required during this evaluation period. What we have done, is to look at the embedded questions to see if they are asking what is needed to correctly evaluate the outcomes. At this point, we are satisfied with them. We will continue to assess and evaluate each course within the program to maintain student success.

However we do feel being a small program, that are sample size is too small. We have modified the different assessments in most cases to included all students in the particular assessment.

The other finding from our assessment of our program and our courses is that many of our students are lacking in basic math skills. We have responded to that need by embedding more applied math into our curriculum and requiring a Math course as part of our certificate.

**PR 4A - Goals - development and change:**

Based on the data from questions 1 – 3 and any other relevant internal or external data your department has collected, how have your department and program goals developed and changed over the past three years?

Response:

The last three years has brought many external and internal challenges to the Metal Fabrication Technology (Sheet Metal) Program. The state budget
The following are the main goals the program has pursued over the past 3 year review cycle:

- Redesign the curriculum into smaller unit classes
- Redesign the certificates
- Introduce more CNC technologies and software
- Increase the size of our Lab
- Develop transferable courses
- Increase enrollment
- Hire a new Full Time Tenured track faculty
- Embed more applied math into our course work
- Change the name of the program from Sheet Metal to Metal Fabrication Technology
- Include more Welding courses in the certificate
- Develop a better tracking system for our students as they leave the program order to better place them in employment and build an alumni network.

PR 4B - Goals - results:
Discuss the steps you have taken to address each goal. What have been the results of these efforts?

Response:

The introduction of smaller unit classes and the deactivation of larger unit classes allowed the program more flexibility in our course offerings and more opportunity to develop an evening program. This, along with redesigning the certificate, lead to greater enrollment and faculty efficiency.

The program has also been successful in receiving VTEA and smaller grants to complement the changes in the curriculum. The program has focused on modernizing the equipment, CNC software and fabrication equipment. These changes also helped increase enrollment along with providing students with skill sets that employer’s desire.

Moving into the II building also allowed the program to expand. This move to a larger facility was direct result of an increasing enrollment.

The program, in discussions with CSULA, introduced a transferable Metal Fabrication course. This course, along with another transferable Welding course, will make up a group of technical courses, totaling 22-25 units that will be transferable to CSULA.

These changes have helped us document an increase in enrollment that lead to the approval for hiring a new full time faculty member.

Through the SLO assessment process, Advisory Committee feedback and faculty observation more applied math will be introduced into the program. The Metal Fabrication Technology Certificate now requires a construction math course as part of the certificate. Faculty in the program are also working with other colleagues in introducing a math course for the trades.

The name of the program was changed to Metal Fabrication Technology to broadened the industries we are trying to place our students. Along with the name change the certificate will be modified to include more Welding courses.

The program faculty has also been exploring the use of social networking (Linkedin) for students, alumni and employers. This network would be beneficial in job placement, career advancement and alumni relations for our students.

PR 4C - Goals - future plans:
Based on the new data collected from SLO’s, what are your plans for change in the future?

Response:

The program will strive to continue to grow and stay viable. This will be a constant assessment of the program and course SLO’s, along with the ever changing needs of our students, employers and the emerging technologies.

The program discontinuance, department reorganization and the hiring of a new CTE Dean will create many opportunities for growth and change.

The immediate goals will be to:

- assist in developing a network for our students
- assist in our new faculty member
- include more welding courses in our certificate
- work with our faculty colleagues in developing new certificates that complement upcoming grant opportunities

PR 5 - Dept - how does it fit into big picture?:
Discuss how the program SLOs as well as the department goals integrate, articulate, and complement the institutional goals and initiatives. (How does
Response:

The goals of the Metal Fabrication Technology program are closely related to the goals outlined by the Board of Trustees, the Educational Master Plan, and the President’s Agenda. In this review it is hoped that both the current effort and the proposed plans described show that the Metal Fabrication Technology program supports the goals of Equity, Community, Student Success, and Workforce Development.

Projects/ Strategies and Resources Needed