

# Peralta Community College District

## Annual Program Update Template 2010-2011

Each discipline will complete this form to update program reviews developed in 2009-2010. These will be reviewed at the college level and then forwarded to the district-wide planning and budgeting process. The information on this form is required for all resource requests – including faculty staffing requests – for the 2011-12 budget year.

|                 |  |              |                |
|-----------------|--|--------------|----------------|
| <b>Overview</b> |  |              |                |
| Date Submitted: | 10/30/2010   | Dean:        | Peter Crabtree |
| BI Download:    | 10/07/2010   | Dept. Chair: | Louis Quindlen |
| Discipline:     | MACH   |              |                |
| Campus:         | Laney  |              |                |
| Mission         | <p>It is the mission of the Laney College Machine Technology Department to give our students the technical skills and professional pride that are the foundations of a successful career as a skilled tradesperson. These skills include not only the basics of machine operations, blueprint reading, knowledge of materials, and CNC and CAD/CAM programming; but critical thinking skills involved in job planning and problem solving that open up the highest levels of employment in the trade. Development of these skills is based on a strong foundation of technical literacy. This foundation is rooted in the fundamentals of strong communication skills in reading and writing, mathematics, and computer competency. Only by integrating technical literacy and the machining skills and knowledge do we truly prepare our students for the rapidly changing world of machine technology.</p> |              |                |

| <b>Student Data</b>            |                  |                  |                  |
|--------------------------------|------------------|------------------|------------------|
| <b>A. Enrollment</b>           | <b>Fall 2008</b> | <b>Fall 2009</b> | <b>Fall 2010</b> |
| Census Enrollment (duplicated) | 98.0             | 138.0            | 147.0            |
| Sections (master sections)     | 9.0              | 11.0             | 11.0             |
| Total FTES                     | 22.78            | 31.8             | 32.24            |
| Total FTEF                     | 2.42             | 2.42             | 2.48             |
| FTES/FTEF                      | 9.43             | 13.16            | 13.0             |

|                     |      |       |     |
|---------------------|------|-------|-----|
| <b>B. Retention</b> |      |       |     |
| Enrolled            | 94.0 | 135.0 | N/A |
| Retained            | 76.0 | 101.0 | N/A |
| % Retained          | 80.0 | 74.0  | N/A |
| <b>C. Success</b>   |      |       |     |
| Total Graded        | 94.0 | 135.0 | N/A |
| Success             | 67.0 | 89.0  | N/A |
| % Success           | 71.0 | 65.0  | N/A |
| Withdraw            | 18.0 | 34.0  | N/A |
| % Withdraw          | 19.0 | 25.0  | N/A |

|  |                  |
|--|------------------|
| <b>III. Faculty Data (ZZ assignments excluded)</b> |                  |
|  | <b>Fall 2010</b> |
| Contract FTEF                                      | 0.85             |
| Hourly FTEF  | 1.44             |
| Extra Service FTEF                                 | 0.19             |
| Total FTEF   | 2.48             |
| % Contract/Total                                   | 34.27            |

|  |                |                 |              |                |
|--|----------------|-----------------|--------------|----------------|
| <b>Faculty Data Comparables<br/>F2010 (ZZ assignments excluded) (Z assignments excluded)</b> |                |                 |              |                |
|  | <b>Alameda</b> | <b>Berkeley</b> | <b>Laney</b> | <b>Merritt</b> |
| Contract FTEF  | 0.0            | 0.0             | 0.85         | 0.0            |
| Hourly FTEF  | 0.0            | 0.0             | 1.44         | 0.0            |
| Extra Service FTEF   | 0.0            | 0.0             | 0.19         | 0.0            |
| Total FTEF   | 0.0            | 0.0             | 2.48         | 0.0            |
| % Contract/Total   | 0.0            | 0.0             | 34.27        | 0.0            |

|                                |  |
|--------------------------------|--|
| <b>Qualitative Assessments</b> |  |
|--------------------------------|--|

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| <p><b>CTE and Vocational:</b> Community and labor market relevance. Present evidence of community need based on Advisory Committee input, industry need data, McIntyre Environmental Scan, McKinsey Economic Report, licensure and job placement rates, etc.</p> | <p>All data points to a high demand for trained machinists. The demand is driven primarily by the high retirement rate of machinists over the next five years and the small number of training programs plus growth in some manufacturing areas.</p> <p>A 2009 Center of Excellenc study commissioned by BayWorks (consortium of water and wastewater utilites in the Bay Area that the Laney Machine Technology Department belongs to) showed that 59% of the machinist/mechanic personnel in EBMUD/Contra Costa county are retiring in the next five years. Link to study <a href="http://www.coecc.net/water">www.coecc.net/water</a></p> <p>This shortage is also reflected by Manpower surveys over the last four years showing that machinist have ranked in the top 5 hardest positions to fill.</p> <p>Over the past two years we have placed or helped 14 students achieve upgrades for an average hourly wage of \$22.00/hr despite one of the biggest economic downturns since the Great Depression.</p> <p>We continue to get more request for machinists than we have students to fill them. We continue to attract major employers to participate in our program advisory board including Cargill, EBMUD, Bay Ship &amp; Yacht, San Francisco Water, Lawerence Berkeley Lab.</p> |
| <p><b>Transfer and Basic Skills:</b> Describe how your course offerings address transfer, basic skills, and program completion.</p>  | <p>The Machine Technology department continues to assess all entering students for reading and math skills. This allows us to refer them to the appropriate foundational skills class and be aware of their needs as they proceed through the program. In our high school program the department works with after school tutors developing strong contextualized curriculum that has been helpful in students passing their math exit exams. The department also is committed to the idea of contextualized learning as a model of improving basic skills. Our faculty have attended a number of workshops on contextualized education.</p>  |

| Strategic Planning Goals   |  |
|--|--|
| <p>Check all that apply.</p> <p>Advance Student Access, Success &amp; Equity<br/> Engage our Communities &amp; Partners<br/> Build Programs of Distinction<br/> Create a Culture of Innovation &amp; Collaboration<br/> Develop Resources to Advance &amp; Sustain Mission</p> | <p>Describe how goal applies to your program.</p> <p><b>Student Access, Success &amp; Equity</b><br/> Our high school machining and welding programs are designed primarily to address the issues of access and equity. Over 90% of these students are designated as underserved by either Perkins measures or the Laney Student Equity Plan.</p> <p><b>Engaging Communities &amp; Partners</b><br/> We are involved as partners in developing training models for many of our partners such as BayWorks, Bay Ship &amp; Yacht and Cargill. We are also actively working through our Tech Prep office and a Bay Area Tech Prep Consortium of high school and community college machine technology instructors to develop assessment, articulation, and professional development.</p> <p><b>Programs Of Distinction</b><br/> The faculty is continuing constant assessment of our curriculum and adding new classes and technology to build a program of distinction.</p> <p><b>Innovation &amp; Collaboration</b><br/> Machine Technology is leading a collaboration of four CTE departments in developing a high demand certificate in Industrial Maintenance. We are also working with all CTE departments in developing a basic skills computer class. The department is also collaborating with Architecture &amp; Engineering to find a common platform for our CAD labs and joint purchase of a Rapid Prototyping machine.</p> <p><b>Develop Resources to Advance &amp; Maintain Mission</b><br/> We are partnering with Architecture and Engineering to develop a uniform workstation platform for our CAD labs. This will improve quality and reliability at a better purchasing price. We are also working with Architecture and Engineering on a joint purchase of a Rapid Prototyping equipment that will be used in conjunction with our CAD labs.</p> |

### College Strategic Plan Relevance

Check all that apply

New program under development

Program that is integral to your college's overall strategy

Program that is essential for transfer

Program that serves a community niche

Programs where student enrollment or success has been demonstrably affected by extraordinary external factors, such as barriers due to housing, employment, childcare etc.

Other

### Action Plan

Please describe your plan for responding to the above data. Consider curriculum, pedagogy/instructional, scheduling, and marketing strategies. Also, please reference any cross district collaboration with the same discipline at other Peralta colleges.

Include overall plans/goals and specific action steps.

The Machine Technology Department has experienced explosive growth over the past four years. Since rewriting our curriculum in 2005/2006 the department has shown a 300% growth in enrollment and a 250% growth in productivity. We plan to continue this growth in numbers and quality through a number of initiatives.

1. Offer a multidisciplinary certificate in Industrial Maintenance that will cover coursework in Machining, Welding, Environmental Control and Electrical Departments. There is great excitement among our partners in this certificate including water and wastewater utilities, industrial companies like Bay Ship & Yacht and Cargill Corporation. We have already changed and written several new courses to implement this certificate including Machine Tech 205 and 206. We plan to complete the new curriculum with one more new course and 30 hour OSHA Industrial Safety Course. We have a strong advisory board already in place for this certificate and see it as a source of high wage job placements over the coming years.
2. Rewrite and update our CNC courses. These two courses Machine Tech 30 and 31 will be augmented by the Measure A purchase of 2 new CNC machining centers that will greatly expand our capacity and currency in the area of advanced manufacturing.
3. Change our department name from Machine Technology to Advanced Manufacturing and Industrial Maintenance to better describe our two fold focus.
4. Through our high school machining program we will continue to bring younger students directly out of high school into the program and address student equity issues. We will also be partnering with BayWorks in creating a pathway for high schools students to train for machinist/mechanic jobs at Bay Area water and wastewater utilities.

### Needs

Please describe and prioritize any **faculty, classified, and student assistant** needs.

Currently we have one full time faculty person and four part time faculty. Two of our part time faculty are teaching at maximum load. It is extremely difficult to find qualified individuals that have both the educational qualifications and hands on experience necessary to teach in these areas. The department is clearly in need of adding a full time instructor especially as the industrial maintenance side of the department grows.

Currently the department has one temporary instructional aid. The department needs a full time instructional aid that can not only help instruction but help with machine maintenance.

Along with all CTE departments a full time computer technician for the division is a priority. We are running complex industrial softwares that are interacting with complex machinery. For the past four years the lack of computer support and ability to plan long term computer infrastructure has severely handicapped all the departments in the division.

Please describe and prioritize any **equipment, material, and supply** needs.

Currently Machine Technology has four priority areas.

1. The Machine Technology Department has entered the bid process to purchase two CNC machining centers with 4<sup>th</sup> axis capability. Completion, installation, training and integration of these two machines into our coursework is the departments top priority.
2. Our computer lab is a disaster to maintain and current computers are outdated and not configured for update with video cards to run the CAD systems we need for SolidWorks and MasterCam. We are in the process of submitting a proposal with Architecture and Engineering that will provide the college and department with a high level uniform CAD platform over the next five years. For Machine Technology this will include the purchase of 23 new workstation level computers (HP Z400) and two workstation level laptops. These workstations are scaleable and will have the capacity to upgrade through purchasing up to date video cards as opposed to whole new systems as the demands of the new software versions increase.
3. As the second phase of the industrial maintenance advanced certificate is developed, new equipment will be needed to support courses like pump and valve repair and advanced maintenance machining.
4. A new component of advanced manufacturing will be the purchase of a Rapid Prototyping Machine. This purchase will increase the currency of Solidworks. Again cost of this purchase and its benefit will be shared by A&ET. There is also high probability this equipment will be useful to a number of our science departments particularly the biology courses dealing with anatomy and physiology.

Please describe and prioritize any **facilities** needs.

The continued expansion of the Machine Technology student numbers plus the introduction of the new Industrial Maintenance Certificate means the department will soon out grow its space. Ideally the industrial space in G130 would provide an area to expand into. This space is poorly designed for a smart classroom but because of the noise in the machine shop and wood shops and the poor acoustics of the industrial type space with the high ceilings.

| <b>Course SLOs and Assessment</b>                   |                  |
|---|------------------|
|   | <b>Fall 2010</b> |
| Number of active courses in your discipline         | 10               |
| Number with SLOs                                    | 7                |
| % SLOs/Active Courses                               | 70               |
| Number of courses with SLOs that have been assessed | 4                |
| % Assessed/SLOs                                     | 40               |

|   |  |
|---|--|
| Describe types of assessment methods you are using  |  |
| Primarily project based assessments   |  |
| Describe results of your SLO assessment progress  |  |
| Assessment has slowed and become less of a priority to new equipment purchases and curriculum and certificate development. The new equipment and courses will create a need for updated slos and assessment measures. Our new partnerships will also give the department greater capacity for assessment. A powerful example of this is demonstrated in our participation in the Regional Tech Prep Consortium of Machining programs in the Bay Area. The consortium's primary goals are open discussion and demonstration of best practices and alignment with national certification based on the National Institute of MetalWorking Skills (NIMS). The department has also been active in pursuing CTE program level outcome assessment through the Laney Career Technical Education Advisory Committee and discussion on building model CTE program assessment with the RP group. |  |

| <b>Program Learning Outcomes and Assessment</b>   |   |
|---|---|
|   | <b>Fall 2010</b>  |
| Number of degrees and certificates in your discipline   | One current certificate and AS degree in Machine Technology and One pending certificate in Industrial Maintenance |
| Number with Program Learning Outcomes   | 1   |
| Number assessed   | 0   |
| % Assessed  | 0   |
| Describe assessment methods you are using   |   |
| Developing a valid assessment methodology for program level outcomes has been difficult. the most accurate method would be to survey both employers and employees after a six month time period on the job. The department does not have the resources to do this type of work currently. |   |
| Describe results of assessment  |   |