

The Program Review process should serve as a mechanism for the assessment of performance that recognizes and acknowledges good performance and academic excellence, improves the quality of instruction and services, updates programs and services, and fosters self-renewal and self-study. Further, it should provide for the identification of weak performance and assist programs in achieving needed improvement. Finally, program review should be seen as a component of campus planning that will not only lead to better utilization of existing resources, but also lead to increased quality of instruction and service. A major function of program review should be to monitor and pursue the congruence between the goals and priorities of the college and the actual practices in the program or service.

~Academic Senate for California Community Colleges

INSTRUCTIONS

This *Annual Update for Program Review and Planning* is due each year that your *Comprehensive Program Review and Planning* report is not due.

(For information about program review cycles, see Instructional and Student Services program review rotation schedules posted online in their respective sections of the program review webpage: http://collegeofsanmateo.edu/prie/program_review/program_review.php)

Resources for Supporting Documentation:

A listing of resources and documents which provide data or information for each section is included at the end of this document, after the final signature page. These resources are posted online and their URLs are listed at the end of this document.

(You may delete this section, when you submit your final program review.)

Next Steps:

All *Annual* and *Comprehensive Program Review and Planning* reports are due March 25, 2010. This date is aligned with CSM's *Integrated Planning Calendar*.
(See: http://collegeofsanmateo.edu/prie/institutional_documents.php.)

Upon its completion, please email this *Program Review and Planning* report to the Vice President of Instruction, the Vice President of Student Services, the appropriate division dean, the CSM Academic Senate President, and the Dean of Planning, Research, and Institutional Effectiveness (PRIE).

Diana Bennett, Academic Senate President, bennettd@smccd.edu
Susan Estes, Vice President of Instruction, estes@smccd.edu
Jennifer Hughes, Vice President of Student Services, hughesj@smccd.edu
John Sewart, Dean (PRIE), sewart@smccd.edu

DEPARTMENT OR PROGRAM: Electronics Technology

DIVISION: Business and Technology

1. BRIEF DESCRIPTION OF PROGRAM: The Electronics Technology Department is in the midst of a two-year self-induced reconfiguration. In essence, the old electronics technology program, as listed in the 2009-2010 College catalog, has outlived its need. The program was preparing students for employment that no longer exists in the nine-county SF Bay Area. Starting in Summer of 2009, the program began a reconfiguration process that will refocus the major on electrical power systems and instrumentation. This reconfiguration continued through the Fall of 2009 and is ongoing now in Spring of 2010. The reconfiguration involves banking several courses used in the old major, replacing them with new refocused course work, revamping program literature, and learning to deal with a new exciting source of employment for program graduates. The source of employment includes public and private utilities and companies that use electronics hardware to facilitate the production or creation of their unique product(s).
2. Based on the elements in your *Core Program and Student Success Indicators* (provided by PRIE for each program) and the goals stated in your most recent Program Review, please identify any key successes and challenges.

The biggest success was the identification of industry sectors that show promise of employment growth over the next ten years. The public and private utilities of the greater Bay Area are facing a "Gray Tsunami", basically 50-to-60% of their current technical workforce is eligible for retirement and could file papers at any time. The threat of losing 50% of their most experienced technical workers has forced the utilities into a frantic "planning for the future" mode. A partnership of several Bay Area utilities, including Pacific Gas and Electric, San Francisco Public Utilities Commission (both Fresh Water and Wastewater Enterprise), and East Bay Municipal Utility District, came together and asked College of San Mateo for assistance in workforce development. That request spurred many meetings that began in the Spring of 2009, continued through the Summer of 2009, and continues now through Spring 2010.

Job descriptions, instructional goals, company-based apprenticeship standards, College course content and review, employment qualifications, and recruiting were all addressed. In the Spring of 2010, a new program was launched leading to a one-year certificate of completion in Electrical Power Systems and Instrumentation. Heavy recruiting was undertaken, with extensive company support, starting in late Spring of 2009 through the end of Summer 2009. Enrollment in our ELEC 110 courses doubled as did enrollment in our ELEC 231 classes. We anticipate similar success in Summer of 2010 and into the Fall of 2010. Our first graduates will be available in Dec. of 2010.

Along the way, content outlines had to be revised and updates, new courses added, SLOs, at the course level, realigned, prerequisites and co-requisites had to be established and justified, and new industry appropriate lab activities and equipment had to be identified and acquired.

The biggest challenge facing the Department was the task of phasing out the old program at the same time we were ramping up the new one. We had to plan and offer

classes so that our last cohort of students for the old major had an opportunity to complete their work and, at the same time, plan, develop, build, and launch our new program.

3. Are you on track for meeting the goals/targets that your program identified in its most recent Program Review? If not, please explain possible reasons why. If needed, update your goal/targets based on these reasons.

No, we are not on target to meet the goals and targets listed in the most recent Program Review because, with our new program direction, those goals and targets are no longer relevant. Why spend time meeting goals and targets for a program that will no longer exist in original form after Spring of 2010? So, the logical thing to do is establish a set of goals and targets for our new venture:

- a. Complete the development and implementation, up through the State level, of a 24-unit major in Electrical Power Systems and Instrumentation.
 - b. Complete the curriculum development activities necessary to establish a new 24-unit major in Electrical Power Systems and Instrumentation.
 - c. Establish an effective set of recruitment documents and materials that will service the college community and our industry partners.
 - d. Refurbish and re-equip 19-24 or 19-36 to support our new major.
 - e. Hiring appropriate full-time faculty to support the program.
4. Have you identified any new goals or projects for the program to focus on during this next year? Please explain (grants, stipends, initiatives, etc.).

See Number 3 above.

5. Are there any critical issues you expect to face in the coming year? How will you address those challenges?

With the retirement of our last full-time instructor in Electronics Technology in June of 2010, the program will be rudderless at the faculty level. Trying to accomplish the goals and targets listed in Number 3 above without the leadership of experienced full-time faculty will be a major challenge to program survival, program growth, industry respect, and overall program success.

The only way to overcome this critical issue is to hire, or assign, at least two experienced full-time faculty member with an FSA in electronics technology.

6. STUDENT LEARNING OUTCOMES (SLOs) AND ASSESSMENT FOCUS FOR THIS YEAR:

- a. Academic areas: Identify at least one course SLO on which to focus. Describe the assessment strategies you will use and your method of reflection and documentation for this cycle.

The SLO selected for focus was in the ELEC 441 course dealing with sensors, data transmission standards, and calibration techniques. The SLO specifically deals with

developing skills in the calibration techniques referred to as "as found, as left". Through a series of lecture presentations, classroom demonstrations, homework assignments, and six laboratory activities (almost 37% of all lab work) the concepts and procedures of this industry standard calibration process was drilled home. Homework was evaluated for concept accuracy and four of the six lab activities were checked by the instructors (after hours) to be sure calibration was as documented. There was even a lab practical calibration activity included in the final exam. Indeed, final exam lab results were outstanding. Students had to demonstrate the operation of the current-to-pressure converter using industry standard calibration equipment as the driving signal source and the output pressure indicator. The students did an excellent job holding accuracy, linearity, and overall performance. Even their technical write-ups were well executed--clear, concise, and technically accurate.

b. Student services areas: TBD

7. SUMMARY OF RESOURCES NEEDED TO REACH PROGRAM ACTION STEPS

(Data resources: Educational Master Plan, 2008, Institutional Priorities, 2008-2011, College Index, 2009-2010, GE-SLOs, SLOs; department records; Core Program and Student Success Indicators; previous Program Review and Planning reports)

a. In the matrices below, itemize the resources needed to reach program action steps and describe the expected outcomes for program improvement.* Specifically, describe the potential outcomes of receiving these resources and the programmatic impact if the requested resources cannot be granted.

*Note: Whenever possible, requests should stem from assessment of SLOs and the resulting program changes or plans. Ideally, SLOs are assessed, the assessments lead to planning, and the resources requested link directly to those plans.

Full-Time Faculty Positions Requested	Expected Outcomes if Granted and Expected Impact if Not Granted	If applicable, <u>briefly</u> indicate how the requested resources will link to achieving department action steps based on SLO assessment.
The Electronics Technology Department is requesting two (2) full-time faculty positions.	This request is based upon the new Department goals and targets listed in #3 above--specifically action items a through d. The work involved in implementing items 3a through 3d involves the program commitment that only occurs when full-time faculty is present. Asking part-time faculty to take on many of the tasks listed and assumed in 3a through 3d are above and beyond the normal expectation placed on part-time faculty. Program continuity, program growth, and program credibility all	Clearly, the biggest reason driving the need for full-time faculty is curriculum development. Starting with hours of up-front meeting time with industry representatives, plant visits, job shadowing, attending professional association meetings, reviewing technical literature--all of these tasks are the on-going responsibility of full-time faculty. From this vast input comes a set of learning objectives and expected results (SLOs) followed by curriculum planning, development,

	<p>hinge on the availability of full-time faculty who are able and willing to speak for and develop the new program.</p> <p>If the positions are not granted then the anticipated program development will slow almost to a halt. Without the support of full-time faculty, the responsibility for the completion of most the listed goals and targets will not occur in a timely manner, if at all.</p>	<p>preparation, and implementation. We are almost starting with a clean slate of course work and lab work. The building process will be complex and lengthy. Program success, however, demands that we follow through with these activities.</p>
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Classified Positions Requested	Expected Outcomes if Granted and Expected Impact if Not Granted	If applicable, <u>briefly</u> indicate how the requested resources will link to achieving department action steps based on SLO assessment.
<p>The Electronics Technology Department is requesting one (1) full-time instruction aide position.</p>	<p>This request is based upon the new Department goals and targets listed in #3 above-- specifically action items a through d. The work involved in implementing items 3a through 3d involves extensive design and creation of instructional demonstration hardware and laboratory hardware plus there is a huge maintenance and repair issue to be dealt with. This individual needs to have the long term program commitment to work hand-in-hand with full-time faculty (see above request). Expecting part-time faculty to take on many of the hardware development and maintenance tasks listed and assumed in 3a through 3d is above and beyond the normal expectation placed on such faculty. Program continuity, program growth, and program credibility all hinge on the availability of full-time instructional support for full-time and part-time faculty such that extensive technical support</p>	<p>Clearly, the biggest reason driving the need for full-time instructional support is curriculum development. As the full-time faculty develop the necessary list of instructional hardware and laboratory activities needed to implement the instructional program and meet the course and program SLOs, professional level support is essential for timely completion of the listed activities. The Department is almost starting with a clean slate of course material and lab work. The building process will be complex and lengthy. Program success, however, demands that we follow through with these activities and, to do so in a timely manner, requires the assistance of an instructional aide.</p>

	<p>and assistance is available to the program.</p> <p>Additional an instructional aide can help in lab management and lab coverage. Staffing a lab with one faculty member and one instructional aide will allow for larger, more diversified, enrollment at lower overall program cost.</p>	
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- b. For instructional resources including equipment and materials, please list the exact items you want to acquire and the total costs, including tax, shipping, and handling. Include items used for instruction (such as computers, furniture for labs and centers) and all materials designed for use by students and instructors as a learning resource (such as lab equipment, books, CDs, technology-based materials, educational software, tests, non-printed materials). Add rows to the tables as necessary. If you have questions as to the specificity required, please consult with your division dean. Please list by priority.

Resources Requested	Expected Outcomes if Granted and Expected Impact if Not Granted	If applicable, <u>briefly</u> indicate how the requested resources will link to achieving department action steps based on SLO assessment.
28--Hameg HM-400 40 MHz. scope--\$752.26@ 28--Hameg HM-80403 Tri-power supply--\$301.00@ 28--Hameg HM-8306 Function generator--\$400.00@ 28--Hameg HM80012 Main frame chassis--\$276.28@ 28--Lab Benches--\$430.00@ 28--Lab Stools with brakes--\$175.00@ 28--PCs with Flat screens--\$1,000@ 1--Network laser printer--\$1,000@ Status*: New	<p>The list of requested resources includes the equipment necessary to rebuild our basic electronics lab. The newest suite of equipment in the lab is 20 years old, has been used for 40+ semesters, and is just worn out. The oldest suite of equipment dates from 1963 (with only a new faceplate added sometime in the very early 1980s). Knobs turn but nothing happens or knobs turn and the unexpected happens. This kind of equipment does not present a functional instructional environment. Plus, enough of the present equipment is broken to the point it is BER (beyond economic repair) and this limits the number of functional lab stations which limits the number of students we are able to carry in lab. Because of the present condition of the lab equipment</p>	<p>Electrical Power Systems and Instrumentation is a lab intensive program. Most all of our new technical courses include a lab component. Course and program SLOs detail the need for laboratory experiences in the curriculum. When the lab equipment does not work or does not work correctly, then the lab experiences don't happen and the SLOs are not satisfied. The lack of functional lab equipment means that the expected outcomes of the SLOs don't happen and there is no black magic, short of putting the student in front of functioning equipment, that will cause the SLOs to be met.</p>

	the student "experience" is compromised, the instructional program is compromised, and the status of the program is called into question.	
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**Status = New, Upgrade, Replacement, Maintenance or Repair.*

8. PROGRAM REVIEW PARTICIPANTS AND SIGNATURES

Date of this *Annual Update for Program Review and Planning* evaluation:

Please list the department's *Annual Update for Program Review and Planning* report team as appropriate:

Primary program contact person: Roy Brixen
Phone and email address: 6135, brixen@smccd.edu
Full-time faculty: Jim MacDonald
Part-time faculty: Ken Manders
Administrators: Kathleen Ross
Classified staff: None
Students: None

Primary Program Contact Person's Signature	Date
Full-time Faculty's Signature	Date
Part-time Faculty's Signature (as appropriate)	Date
Administrator's Signature (as appropriate)	Date
Classified Staff Person's Signature (as appropriate)	Date
Student's Signature (as appropriate)	Date
Dean's Signature	Date

**Annual Program Review
RESOURCES FOR SUPPORTING DOCUMENTATION**

This section contains a listing of sources for data and key documents referred to in this *Annual Update* along with other resources. Contact information for relevant people is also included.

Academic Senate

<http://www.collegeofsanmateo.edu/academicsenate/>

Contact: csmacademicsenate@smccd.edu

Diana Bennett, President, bennettd@smccd.edu, (650) 358-6769

College Catalogs and College Class Schedules are archived online:

<http://collegeofsanmateo.edu/schedule/archive.asp>

Course Outlines are found at:

<http://collegeofsanmateo.edu/articulation/outlines.asp>

Committee on Instruction

<http://www.smccd.net/accounts/csmcoi>

Contact: Laura Demsetz, Chair, demsetz@smccd.edu, (650) 574-6617.

Program Review Resources (includes forms, data, and completed program reviews for both instructional and student services program review)

Core Program and Student Success Indicators (see links for "Quantitative Data for Instructional Programs")

Distance Education Program Review Data

Glossary of Terms for Program Review

Listing of Programs Receiving Program Review Data from PRIE

Rotation Schedule for Instructional Program Review, 2008-2014

http://collegeofsanmateo.edu/prie/program_review/program_review.php

Office of Planning, Research, and Institutional Effectiveness (PRIE)

<http://collegeofsanmateo.edu/prie/>

Contact: John Sewart, Dean, sewart@smccd.edu, (650) 574-6196

Contact: Milla McConnell-Tuite, Coordinator, mcconnell@smccd.edu, (650)574-6699

At PRIE Website:

College Index, 2009-2010, http://collegeofsanmateo.edu/prie/institutional_documents.php

Comprehensive Listing of Indicators and Measures, 2009-2010

http://collegeofsanmateo.edu/prie/institutional_documents.php

Division/Department Workplans, Spring 2009 (only)

http://collegeofsanmateo.edu/prie/institutional_documents.php

Educational Master Plan, 2008, <http://collegeofsanmateo.edu/prie/emp.php>

Institutional Priorities, 2008-2011

http://collegeofsanmateo.edu/prie/institutional_documents.php

Student Learning Outcomes (SLOs) website:

<http://www.collegeofsanmateo.edu/sloac/>

Contact: Frederick Gaines, Interim SLO Coordinator, gainesf@smccd.edu, (650)574-6183