

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:

DIVISION:

1. BRIEF DESCRIPTION OF PROGRAM:

The Chemistry program offers the first two years of chemistry courses to serve two major tracks:

- 1) The first two years of chemistry required for a baccalaureate in various majors such as biology, chemistry, engineering etc.
- 2) Various chemical courses required for certificate or two year programs such as nursing, dental assisting, lab technologist etc.

Courses offered in chemistry include:

Chem 192 Elementary Chemistry – a first introductory course in chemistry for non-science majors, remedial preparation or some certificate programs. Prereq: Math 110 or one semester algebra. Recommended: enroll concurrently in MATH 115 or MATH 120 or 122.

Chem 210 General Chemistry I – first semester general chemistry for science majors. Prereq: CHEM 192 with a grade of C or better or equivalent; MATH 120 with a grade of C or better. Recommended: eligibility for ENGL 838/848 and one course in physics.

Chem 220 General Chemistry II – second semester general chemistry for science majors. Prereq: Chem 210 with a grade of C or better.

Chem 231 Organic Chemistry I – first semester organic chemistry for science majors. Prereq: Chem 220 or 225.

Chem 232 Organic Chemistry II – second semester organic chemistry for science majors. Prereq: Chem 231

Chem 250 Analytical Chemistry Quantitative Analysis – Introduction to chemical analytical procedures. Prereq: Chem 220 with a grade of C or better.

Chem 410 Health Science Chemistry I – a first introductory course in general chemistry for some health professions. Prereq: None Recommended: MATH 110 or one semester course of algebra, eligibility for ENGL 848.

Chem 420 Health Science Chemistry II – a first introductory course in organic/biochem for some health professionals. Prereq: Chem 410

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.

During the years from 2007 through 2010 the headcount in chemistry has risen approximately 10% from 864 to 938 (concurrent with FTES from 256 to 294 and Load 513 to 587). Each year approximately 1 FTEF is covered by full time faculty overloads. The increasing enrollments have been caused by pressures of many students studying to pursue health care careers.

Action goals that have been carried out during the past year include some rearrangements of classes (particularly organic classes) to better meet student needs. This is particularly important in light of the upward enrollment pressures noted in the paragraph above.

A student centered SLO survey was developed and administered via the college website for survey activities. This format proved to be successful and will be edited and re-administered in three courses in the current semester.

Also new textbooks were adopted in several courses and on-line homework systems were evaluated.

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.

Yes the department is successfully re-organizing courses to meet the increasing student demand. The Chemistry 250 course is being offered in the coming Fall semester to help educate students that are seeking to train in lab tech fields.

The SLO goals of developing an on-line student survey form have been implemented and used in one assessment cycle. This methodology will be repeated in the current semester and the data will be compared between the two cycles to look for any changes or reinforcement of patterns.

The new on-line homework system is actively being used and evaluated in several courses. Consensus on the system is not complete since there are both positives and negatives to using the system.

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.).

No new goals have been identified other than to adjust the organic sections offered with particular emphasis on the "off semester" students. The CHEM 250 analytical course will be offered again in the Fall semester (after a year of being banked)

Additionally, the SLO survey will be repeated for the second time so that the student survey data can be checked to see if there are trends or drastic changes that need to be addressed. Action on these outcomes can be taken in the coming year (2011-12) if the data indicates a need.

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

There are currently no critical issues facing the chemistry department; however, we are on a few year countdown to a probable faculty retirement. Since we currently cover 1 full time faculty equivalent by overload it will be important to be prepared to hire another full time faculty member within the next few years. It would be nice to have some overlap being the new professor hire and the retirement in order to get things running smoothly before the loss of one full-time instructor.

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.

As mentioned above we are currently developing a student centered Web-based SLO evaluation questionnaire for the courses CHEM 192, CHEM 410 and CHEM 420. These courses are commonly used by students to fulfill the requirements for a nursing degree, so they are very important for the students planning to study for health related fields. We have developed a questionnaire that will be emailed to the students in these classes and the

overall data will be analyzed and compared between the Fall and Spring sections of these particular courses. Once this data is collected we will be better able to judge future actions that might be appropriate in these particular courses.

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.
One full-time professor	Full support for the two major divisions within the chemistry program (organic and inorganic focus) Ability to extend and develop student learning resources for chemical education.	Increased ability to actively improve course offerings such as biochemistry exposure. Improved ability to respond to departmental workload to insure course suitability and improvement. Help maintain and acquire appropriate scientific instrumentation in the department.

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.
None at this time		

- 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.
Item: Colorimeter Probes Number: 10 Vendor: MeasureNet Unit price: \$500 Total Cost: \$5500 Status*: New	Complete the most expensive probes for the MeasureNet data stations so all the labs can do spectroscopic measurements.	Small instruments and data stations complete the student's exposure to modern scientific data collection and analysis techniques.
Item: GC Mass Spec Number: 1 Vendor: Labx Unit price: \$30,000 Total Cost: \$35,000 Status*: New	Expose second year organic students to a typical mainstream scientific instrument that is heavily used in industrial settings.	
Item: Wooden Stand MeasureNet Stations Number: 20 Vendor: MeasureNet Unit price: \$150 Total Cost: \$3200 Status*: New		
Item: Crystal Pipetters Number: 30 Vendor: World Precision Unit price: \$170 Total Cost: \$ 5200 Status*: New		
Item: pH Electrodes Number: 10 Vendor: Fisher Unit price: \$125 Total Cost: \$1300 Status*: New	These keep MeasureNet and Various pH meters up to date to keep functional equipment available for students.	
Item: Spectronic 20 UV/VIS Number: 4 Vendor: Fisher Unit price: \$2500 Total Cost: \$10,000 Status*: New	Need to upgrade and replace current aging units for several general chem. Courses.	

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: Michael Clay
Phone and email address: 650 574-6604 clay@smccd.edu
Full-time faculty: Kate Deline, Jeff Flowers, Yin Mei Lawrence
Part-time faculty:
Administrators:
Classified staff:
Students:

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