

Program Review/Follow-up Transmittal

General Information


The attached report is (check one): Program Review (published every 4th year)
 Program Review Follow-up (submitted annually)

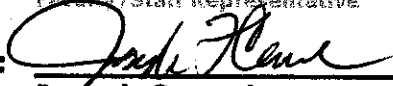
The report is submitted for the Academic Year (select one): 2009-10

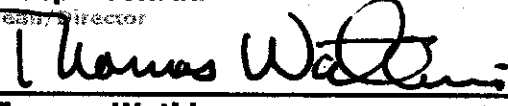
The report contains information on the follow unit(s) (enter names of all units/programs):
Chemistry


Report Abstract:


The chemistry department continues to serve transfer and allied health students. The department has added Chem 051 (already articulated with several CSU schools) and increased section offerings in Chem 160 and Chem 010. Technology use in classes has increased and a new full-time faculty member was hired. To maintain offerings and quality, budgets should be increased and updated equipment purchased.

Signature:  Date: 6/17/10
Kiran Kaur
Faculty/Staff Representative

Signature:  Date: 6/17/10
Joseph Conrad
Dean/Director

Signature:  Date: 21 Jun 10
Thomas Watkins
President, Academic Senate

Signature:  Date: 6/30/10
Robin Steinback
Vice President

Signature:  Date: 7-13-10
Jowel Laguerre
Superintendent/President

Program Review and Analysis

Part I Outcomes

1. What are the Student Learning Outcomes (SLOs) and Institutional-Level Outcomes (“Core Four”) of the program? List each along with descriptions of the appropriate indicators of program success (i.e., measures of outcomes). Include both quantitative and qualitative measures.

Outcome(s)	Qualitative Measure(s)	Quantitative Measure(s)
1. Attract high quality students from Solano County and beyond.		Increased percentage of the county's high school students enrolled in chemistry classes. Enrollment in chemistry classes has increased 8% in the last four years. (Goal 1, objective 1.1 and Goal 2 , objective 2.3)
2. Complete lower division chemistry requirements for Allied Health		Our Chem 10 course is a gateway course in Allied Health. From Fall 2006-Fall2009 it shows a 77 % pass rate. (Goal 2, objective 2.4)
3. Complete lower division Chemistry requirements for Science majors.		Our Chem 1 course is a prerequisite for most majors. From Fall 2006-Fall2009 it shows a 64 % pass rate. (Goal 2, objective 2.4)
4. Complete Organic Chemistry upper division requirements for major professional fields		Our Chem 4 course is a requirement for most majors. From Spring 2007-Spring 2009 it shows a 86 % pass rate. (Goal 2, objective 2.4)
5. Gain experience with laboratory equipment comparable to or better than other California Community Colleges and transfer institutions.	Students gain experience using standard laboratory equipment in all courses. Both teaching laboratories are updated with the Vernier computer interface that allows students to gain experience with electronic probes, data collection and data analysis. (Goal 1, objective 1.2 and Goal 2, objective 2.4)	
6. Provide transition classes for students with non-science backgrounds or goals.		To meet increased enrollment in allied health programs, at least seven sections of CHEM 160: <i>Introductory Chemistry</i> are offered each fall and spring semester (including two evening classes each semester with one offered at the Vallejo Center) . Three-four sections are now offered in the summer to enable students with non-science backgrounds to transition to majors and careers that require college chemistry coursework. Six to seven CHEM 10: <i>Intermediate Chemistry</i> sections are now offered every fall and spring semester with one section being offered at either the Vallejo or Vacaville Center. (Goal 2,objective 2.1)

7. Enable students to transfer successfully and succeed at their transfer colleges.	Students transfer successfully to both UC and CSU systems and they maintain grade point averages near what they earned at Solano Community College.(Goal2, objective 2.3)	
8. Enable students to be able to determine the value of the scientific information they encounter in everyday life.	Several Chemistry classes include Field Trips to connect students with day to day Chemistry in life.(Goal3, objective 3.2)	

2. The specific SCC Strategic Direction and Goal(s) supported by this program:

Goal 1-Foster Excellence in Learning:

Obj. 1.1 — Create an environment that is conducive to student learning.

Obj. 1.2 — Create an environment that supports quality teaching.

Goal 2-Maximize Student Access & Success:

Obj. 2.1 — Identify and provide appropriate support for underprepared students.

Obj. 2.3 — Identify and provide appropriate support for transfer students.

Obj. 2.4 — Improve student access to college facilities and services for students.

Goal 4-Optimize Resources:

Obj. 4.3 — Maintain up-to-date technology to support the curriculum and business functions.

Part II Analysis

1. Identify and explain the trends in:

Enrollment— The growth trend shows a steady increase from 1407 students in the 2004-05 school year to 1,529 students in 2008-09, a 8% increase.

Retention— Retention rates range between 74% and 82%. Retention was generally highest for summer (78-88%) and, about equal in fall (75-83%) and spring (72-81%). On a yearly basis average retention continues to be 78% . This is outstanding retention for a core physical science like chemistry.

Fill rate— The fill rate has decreased since 2004-05 from 94% to 83% because we kept adding new sections to accommodate student needs.

Other Factors— There is increasing demand for the biological sciences statewide and nationwide. Students are becoming more career oriented, and employment in allied health fields such as pharmacy and nursing is projected to rise.

Outcome Data— Prior to 2008 there were no Program SLO data for comparison.

2. How do the above trends relate to the factors and outcomes identified during the last review?

Enrollment has increased from 2004-05 as the economic environment has changed and students have become aware of the department's revised, technology-competent program and the success of its students at transfer colleges.

Part III Conclusions and Recommendations

1. What are the major accomplishments of the program during the past four years?

- The Organic Chemistry Professor won the academic senate "Distinguished Faculty" award in May 2009 for her greatly successful Organic Chemistry program.
- Increased the number of section offerings in CHEM 160: *Introductory Chemistry* and CHEM 10: *Intermediate Chemistry*.
- Added a new course CHEM 51 which has already been articulated to Sonoma state, CSU Sac, CSU East Bay and CSU San Bernardino.
- Added new sections of Chem 003 in Spring 2009 and Chem 004 in Fall 2010.
- Instructors are increasingly using technology in their teaching. The computer stations are equipped with a symposium, ELMO, printer, video capability, and projector in the classrooms and labs are fully utilized.
- Updated lab interface hardware and software from Lab works (no longer supported) to Vernier Lab interface.
- Hired a new full-time faculty member to bring total full time faculty to five.

2. Based on the analysis above, are there any changes needed in order to meet program goals or to improve program effectiveness? Explain.

- Repair and maintenance budgets must be increased to regularly service the UV spectrometers and the Vernier interface. Regular maintenance of these instruments will guarantee the longevity of the equipment.
- The purchase of new equipments like Vernier mini GC and the Vernier Lab Quest interface , as well as wide range temperature probes are useful tools to maintain the current level of excellence in the chemistry program.
- Additional lecture classrooms and laboratories are needed so that it no longer will be necessary to run classes late in the evening.
- Hire a Chemical Hygiene officer.
- Provide regular training in Chemical safety Protocols, proper use of equipment and waste management for all technical staff members, including part-time and student help.
- Hire a part-time (20 hours minimum) assistant to help the chemistry lab technician.
- Investigate the need for a Chemistry Technician program.
- Offer open and reliable access to technology such as computers including all the Chemistry software available outside the Chemistry lab.
- Add a GE Liberal Arts Chemistry course for non-majors.