



## Chemistry Program Review

2013-2014

Department Chairs,

It is program review time again! Enclosed you will find your program review document that needs to be completed and turned in to your Dean by October 7, 2013. The purpose of program review is for faculty and staff members to evaluate their program's performance based on an analysis of data and to develop initiatives for improvement. Through the creation of initiatives, some requiring resources and some not, programs will establish goals and long-term program plans.

You will see that the document has been simplified in order to provide a more cohesive but functional document that we hope will be easier for your department to complete. You will also find included appendices with helpful information such as the Process Map, What to Leave In and What to Leave Out Guidelines, and the Academic Senate Rubric for Instructional Program Vitality.

Please note that instruction prompts have been provided in italics throughout sections of the document to provide guidance for interpreting data and providing analysis statements. You may remove these instructions as you complete each section. Please use 11 point, Calibri font for consistency.

Areas such as your program/department description and the staffing chart have been pre-populated using information from your last program review document. Please revise as necessary. Please note that you are not required to create initiatives for each area of data. However, programs are required, at a minimum, to create initiatives that do not require resources as every program should have some area (i.e. student success, retention) in which it is trying to improve. And programs, which offer degrees and/or certificates, need to set goals for increasing program completion rates (per direction from the Accrediting Commission).

The last page of the document includes a process verification section where you will note the participants and document the meeting dates. Your Division Dean will also need to electronically verify review prior to submitting the document, so be sure to plan accordingly.

### **Appendices:**

A-Program Review Process Map-Instructional Programs

B-What to Leave In and What to Leave Out

C-Academic Senate Rubric for Instructional Program Vitality-Instructional Academic Programs

D-Academic Senate Rubric for Instructional Program Vitality-Instructional CTE Programs

E-Appeal Form

### **Attachments:**

Data packets for your program/department

### **WHO TO CALL FOR ASSISTANCE**

#### **Budget and Inventory Data:**

David Keebler, VP-Administrative Services, ext. 6354

#### **Data Analysis and Interpretation:**

Michael Callahan, Institutional Researcher, ext. 6344

#### **Instructional Programs:**

Kathy Scott, Dean-Institutional Effectiveness, ext. 6468

Debbie Newcomb, Faculty Facilitator, ext. 6368

Sandy Hajas, LRC Supervisor, ext. 6179

#### **Services:**

Susan Bricker, Registrar, ext. 6044



**Due October 7, 2013**



## Chemistry Program Review

2013-2014

Sandy Hajas, LRC Supervisor, ext. 6179

Kathy Scott, Dean-Institutional Effectiveness, ext. 6468



## Chemistry Program Review

2013-2014

### Section I – Accomplishments and Status of 2012 Program Review Report

#### **A. Last Year's Initiatives**

The department requested funding for a preventative maintenance contract for the ChemV12AL/V12BL GC-MS instrumentation, as well as a software update to Clarity Lite. Both were purchased and the software installed, but one of two GC-MS instruments in the laboratory is still not calibrating properly and will probably need further funds for repair.

The department requested funding for including technology in the ChemV20L classroom, including computers, data projectors, visualizers, and an instructor computer. This has been installed and is now in use to increase student learning.

The department requested an increase in funding allotted for tutoring and Supplementary Instruction specifically for chemistry courses. The SI program was funded for the ChemV20 sections through the Title V—Velocidad grant, but not the department's other courses.

Faculty in the department have also updated the ChemV01BL lab manual to incorporate technology and instrumentation and to better align it with the lecture course.

The department also worked to increase standardization among different sections of the same course, particularly in the laboratory courses. Universal experiment schedules and for some courses standardized quizzes have been developed. The laboratory manuals for ChemV01BL, ChemV12AL, and ChemV12BL have also been rewritten over the past year to increase applicability to our equipment and resources to enhance student learning.

#### **B. Updates/accomplishments pertaining to any of the Student Success or Operating Goals from last year's report.**

Last year the department set goals to maintain its three-year average retention and success rate and to exceed the college's three year average retention and success rate. This has remained true; the department increased its retention rate and success rate by 2% and 1%, respectively, over the three-year average, and continues to exceed the college's three year average by 1% and 4% respectively. The department also continues to exceed the district's goal of a 525 WSCH/FTEF ratio at 574. Inventory of the department's instructional equipment was taken and maintenance contracts were found for some instrumentation. The department also continues to be active in improving its curriculum according to the discussions initiated via the SLO assessment process.

### Section II - Description

#### **A. Description of Program/Department**

Students participating in the Chemistry Program will be able to apply the scientific method to analyze and interpret data in order to draw valid conclusions, relate observable macroscopic properties to underlying microscopic principles, communicate scientific ideas effectively in a logical and understandable manner, both verbally and in writing, and become proficient in current chemical laboratory safety and skills. Students may participate in both lecture and laboratory courses designed to prepare them for majors such as nursing, environmental studies, biology and many others at Ventura



## Chemistry Program Review

2013-2014

College or a four-year institution. In addition, students will find careers in such fields as medicine and pharmaceuticals, petroleum, nanotechnology, business, and education.

### Degrees/Certificates

N/A

### B. Program/Department Significant Events (Strengths and Successes), and Accomplishments

Over the last year faculty have rewritten the laboratory manuals for ChemV01BL, ChemV12AL, and ChemV12BL and made these required materials free to and more accessible for students. These manuals even incorporate multimedia, including photo and video demonstrations of techniques and set-ups, and enhance the student laboratory experience. Faculty have also been continuing to work closely with CSUCI and UCSB on a variety of grants, including utilizing their remote NMR facilities, recruiting to and supporting VC students into the schools' undergraduate research programs, and increasing transfer rates to these institutions. Faculty have met with other chemistry faculty at Moorpark and Oxnard Colleges to increase cohesion between the programs in the district. We have formalized a five-year rotational plan for SLO implementation and continue to assess and collect data in order to initiate discussions about promoting student learning. Faculty are also involved in the Leadership Team for the Title V—Velocidad grant at Ventura College, including working with the Supplementary Instruction (SI) program and other resources to reduce the achievement gap between Hispanic students and those of other ethnic groups.

The department's courses continue to have very full enrollment every term. Despite this, our budget for our classified staff lab technician and other supplies has decreased, making it difficult to service our high volume of students and maintain the quality of our courses for articulation.

### C. 2013-2014 Estimated Costs/Gainful Employment – for Certificates of Achievement ONLY

N/A

### D. Criteria Used for Admission

Students must meet prerequisites for individual courses.

### E. College Vision

Ventura College will be a model community college known for enhancing the lives and economic futures of its students and the community.

### F. College Mission

At Ventura College, we transform students' lives, develop human potential, create an informed citizenry, and serve as the educational and cultural heart of our community. Placing students at the center of the educational experience, we serve a highly diverse student body by providing quality instruction and student support, focusing on associate degree and certificate completion, transfer, workforce preparation, and basic skills. We are committed to the sustainable continuous improvement of our college and its services.



## Chemistry Program Review

2013-2014

### G. College Core Commitments

Ventura College is dedicated to following a set of enduring Core Commitments that shall guide it through changing times and give rise to its Vision, Mission and Goals.

- Student Success
- Respect
- Integrity
- Quality
- Collegiality
- Access
- Innovation
- Diversity
- Service
- Collaboration
- Sustainability
- Continuous Improvement

### H. Organizational Structure

**President:** Greg Gillespie

**Executive Vice President:**

**Dean:** Dan Kumpf

**Department Chair:** Malia Rose

**Faculty/Staff:**

<b>Name</b>	<b>Joy Kobayashi</b>
Classification	Professor
Year Hired	1985
Years of Work-Related Experience	
Degrees/Credentials	B.A., M.S.

<b>Name</b>	<b>Michelle Hagerman</b>
Classification	Associate Professor
Year Hired	2007
Years of Work-Related Experience	
Degrees/Credentials	B.S., M.S.

<b>Name</b>	<b>Malia Rose</b>
Classification	Assistant Professor
Year Hired	2009
Years of Work-Related Experience	
Degrees/Credentials	B.S., M.S.

<b>Name</b>	<b>Joe Selzler</b>
Classification	Professor
Year Hired	2004
Years of Work-Related Experience	
Degrees/Credentials	B.S., M.S.

### Section IIIa – Data and Analysis

# Chemistry Program Review

## 2012-2013

### A. SLO Data

Over the last year (Fall 2012, Spring 2013) the department has assessed CSLOs for ChemV01A/V01AL, ChemV01B/V01BL, and ChemV12A/12AL. The CSLO for ChemV01A revealed that many students seemed underprepared, particularly in the math preparation area, and might do better taking ChemV20 first instead or having more access to greater support and tutoring. The lack of math preparation was especially apparent in ChemV01B due to its heavy integration of algebra required to solve chemical equilibria problems. Outside resources, including tutoring, SIs, or other support could help students be better prepared and achieve higher. In addition, department faculty are continuing in discussions about how to add in topic repetition during lecture while still adhering to schedule, as well as establishing more consistency between the various sections.

In the lab courses, the CSLO assessments revealed that having the resources to allow students to do multiple trials in an experiment, or even an experiment over from the beginning, could have a drastic improvement on student achievement. Quite often the students were simply lacking in repetition; they didn't have the time or the resources available to truly master techniques. The latter was very much due to the cut in the department's lab technician's contract as well as cuts to student workers. Labs had to be scaled down so that all the department's varying sections could be covered, and this prevented students from being able to make mistakes—a natural occurrence and essential to the learning experience—in lab and then, most importantly, correct them in their next trial.

The department has also put great effort into revising the laboratory manuals to address some of this for ChemV01BL, ChemV12AL, and ChemV12BL to make it more affordable and accessible to our students, as well as more enhancing of their educational experience. The lab manuals are being written by the department's faculty specifically tuned to our resources for clarity as well as using chemicals that are safer and more environmentally-friendly. They are also tailored to our students' level and the material and techniques that they specifically need to learn for each course.

Last semester (Spring 2013) the department met, organized, and established a five-year rotational plan for SLOs with the help of a facilitator. All courses were mapped to one ISLO, and all CSLOs, assessment tools, and the previous year's findings were input to TracDat. This semester (Fall 2013) the department is preparing to assess those courses indicated in our five-year rotational plan, and has already met to set assessment tools, performance goals, and dates to complete the scheduled assessments.

### B. Performance Data

#### 1. Retention – Program and Course

## Chemistry Program Review

### 2012-2013

The retention rate for the department continues to exceed the college's average at 87%, a 2% increase over the department's three-year average. Given the academic rigor of the courses offered by the department, this is remarkable. The department's retention rate has continued to gradually increase in recent years and continues to exceed expectations.

Throughout the department's courses, there is a noticeable difference in retention between Hispanic and White students, the two largest ethnicities represented in the program. Currently faculty are working with the Title V—Velocidad grant to utilize Supplementary Instructors and other resources to address this in the targeted ChemV20, Elementary Chemistry course. Other classes could benefit from these additional resources, including SIs, additional tutoring, and laboratory equipment and supplies as well to help decrease this gap.

#### **2. Success – Program and Course**

The department's success rate continues to exceed the college's average, being reported at 74%. This is also a 1% increase over the department's three-year average. In comparison to recent years, the department's success rate continues to remain constant. Given the academic rigor and level of the coursework offered, this is remarkable and continues to exceed expectations.

The ChemV01A, General Chemistry I course has the lowest success rate in the department, being 57% this year. This is expected, as this class is the first that students take from their chemistry requirements, as well as often being taken during their first semester after high school. Additional tutoring or Supplementary Instructors would help identify and assist struggling students early to instill the study and math skills that are often the greatest barriers for students in this course.

Much like the retention rates, the success rates for the department show a noticeable gap between Hispanic and White students. The department will continue to work closely with the Leadership Team on the Title V—Velocidad grant to develop techniques and resources that may help to decrease this.

The grade distribution for the department is on par with the college averages, though this is only true when looking at the department as a whole. Typically for lectures, grade distributions are more "normal", meaning that most students receive B's and C's and a smaller percentage receiving A's. Laboratory classes, however, have significantly higher percentages of students receiving A's than all other letter grades. This is mostly due to the group-work nature of the course, as well as a large percentage of the required assignments being done in class with direct instructor supervision.

#### **3. Program Completion – for "Programs" with Degrees/Certificates Only**

# Chemistry Program Review

## 2012-2013

Not applicable.

### C. Operating Data

#### 1. Demographics - Program and Course

The department continues to serve a primarily Hispanic and White student population, with 44% and 35% respectively. However, the percentage of Hispanic students has noticeably increased over the previous three-year average by an additional 4%, while the percentage of White students has decreased by 3%. The other ethnicities have remained relatively constant, as well as the distribution by gender and average age.

The department's average of Hispanic students is noticeably below that of the college, being 7% different, and the other ethnicities relatively similar. There is not a clear reason for this.

#### 2. Budget

- Program members have reviewed the budget data.
- No comments or requests to make about the budget

Despite serving a significantly greater number of students as our sister college in Oxnard, our department employs only one laboratory technician to prepare and supply all the various laboratory sections offered. Our technician's contract has been reduced from twelve months to an eleven month contract. This has prevented her from adequately preparing samples and equipment for lab classes, as well as being present while classes are meeting to assist instructors. This has had a dramatically negative effect on student learning as students are limited in the amount of analyses and trials they can do, delayed by needing to share equipment and supplies, and reducing instructors' ability to interact directly with the students as they often have to help setting up the labs. If our technician's contract is not increased back to twelve months, the department will be unable to offer the same number of lab sections.

The budget for student workers has also been regularly cut. Not only does the opportunity to be trained and employed in a working laboratory setting greatly enhance the individual student's education and occupational experience, but it also helps the laboratory technician by having trained staff on hand to meet the department's needs.

Increasing both of these parts of the budget would tremendously impact student learning for the good.

#### 3. Productivity – Program and Course

## Chemistry Program Review

### 2012-2013

The department has maintained a productivity factor well above the college average and the district goal, at 574 overall. This progress continues to be remarkable as the department's lab courses are all capped at a maximum of 28 students due to space and safety concerns. Despite this, many of the lab courses average very close to the district goal of 525. All courses, and especially the extra-large lectures, continue to have very full enrollment which helps to bolster the department's productivity.

The current 574 number is a decrease from the previous three-year average of 593, which could be attributed to the college's overall decrease in enrollment. It also seems that students are waiting to enroll in classes later than usual, which can cause them scheduling problems as certain sections fill faster than others. Individually almost of the department's courses have maintained their previous levels of productivity.

The Chem21/Chem21L courses' productivity dramatically increased over the last year by 20 and 25% respectively. This is most likely due to the addition of a second section of Chem21L which allows students to take the lecture and lab components simultaneously.

The Chem12BL's productivity is below the district goal at 203. This is due to the class being a specialized, upper division course that only particular majors and programs, are required to take. Though the productivity is low, this class is absolutely essential for many students to complete the chemistry coursework before transferring, is a required co-requisite with the full lecture component, and cannot be reduced or its scheduling altered.

#### **D. Resources**

##### **1. Faculty**

The department's FTEF for last year was 2.51, a -39% change from the previous three-year average. This was due to a faculty member taking load-bank leave in Fall 2012, one faculty taking sabbatical during Spring 2013, and another taking medical leave and sabbatical in Spring 2013 through Fall 2013. It is expected, however, that all four of the department's current full-time faculty will be teaching in Spring 2014. Due to these leaves, the department hired a one-semester temporary full-time faculty for Fall 2013. One of our current adjuncts was selected and is teaching this term. As a result, the department was able to offer its full set of courses and sections to students. Using the three-year average instead of the unusual FY13 number, the department is at 44% for its full-time faculty and 56% for its part-time, which is equivalent to the college averages.

Due to the department's high enrollment and numerous class sections, it can often be a struggle to find enough adjunct instructors to cover all the sections offered. Fortunately we

## Chemistry Program Review

### 2012-2013

have not had to cancel any sections due to lack of staff, but with turnover, we are often hiring new part-time faculty for our pool to ensure we can still offer all of our sections, and probably will be again in the near future.

#### **2. Classified Staff**

The department currently has one classified staff laboratory technician. This single technician is responsible for maintaining all four of the chemistry laboratory rooms and keeping them up to proper safety guidelines, as well as preparing, setting up, and then cleaning up all materials required for every experiment scheduled for each class throughout the week. The technician also manages the stockroom and is responsible for inventory, maintaining, and ordering the many supplies and equipment that the department owns and utilizes for instructional purposes. The technician is also supposed to be available while labs are in session to help assist and support the instructors in case supplies run out, errands have to be run, etc., so that students are not left alone in the laboratory.

Despite this heavy amount of responsibility, the contract for our laboratory technician was cut from twelve months to eleven. This has sometimes not allowed the technician to be present while a laboratory class was meeting or be able to thoroughly prepare the experiments due to the hours being cut. This has had severe effects on our laboratory sections, causing adjustments to the curriculum to avoid needing too many things to be prepared, which in turn prevents students from performing multiple trials and perfecting techniques. We will be requesting a restoration of our technician's contract to the original twelve months.

#### **3. Inventory**

The department owns a great deal of equipment used in our laboratory sections, including computerized sensors for pressure, temperature, pH, etc., electronic balances, and specialized glassware such as burettes. It is integral to the lab curriculum and students' learning experience that they be exposed to and taught how to use this laboratory equipment in a hands-on environment. Due to constant use in multiple sections, some equipment will break down over time and can no longer be used for instructional purposes. The department would like to request an allocation for replacing broken equipment each year to ensure we have enough for each section and each student.

#### **4. Facilities or other Resource Requests**

The department will not be making any requests for facilities or other resources.

#### **5. Combined Initiatives**

The department will be making an initiative to address the restoration of our laboratory technician's contract to twelve months, as mentioned in the Budget, SLO, and Classified Staff sections.

The department will be making an initiative to address the expansion of our laboratory supply budget for the renewal and replenishment of our exhausted inventories, as mentioned in the Budget and Inventory sections.

# Chemistry Program Review

## 2012-2013

### E. Other Program/Department Data

The department has no outside data to report.

### Section IIIb – Other Program Goals and Initiatives

The department will be requesting the purchase of a new NMR instrument to enhance the learning experience for students in ChemV12AL, ChemV12BL, and ChemV05. The ability to teach students hands-on techniques using this equipment are vital to the students' experience in these laboratory courses and will help emphasize topics and information taught in all three courses. This is especially true for ChemV12AL/V12BL, as the organic chemistry laboratory sequence requires students to learn how to interpret NMR spectra, which for now are simply print-outs and not actual measurements of their actual samples.

The department will also be setting an initiative to establish an AS degree to help with students' transfer.

### Section IV – Program Vitality (Academic Senate Approved Self-Evaluation)

The department's score on the self-evaluation sheet was 22. This means that the department is right on track with its productivity, student retention and success rate, and SLO assessment goals. As was stated on the evaluation, the low score in the enrollment section is somewhat misleading; even sections that are not completely full by the start of the term are usually only a few empty seats short of being full. Even these are few and far between, as most of the department's sections are completely impacted to the point of having to turn many waitlisted and "crashing" students away.

### Section V - Initiatives

**R** = Required – mandated or unavoidable needs (litigation, contracts, unsafe to operate conditions, etc.)

**H** = High – Approximately 1/3 of the total program/department/division's initiatives by resource category

**M** = Medium – Approximately 1/3 of the total program/department/division's initiative by resource category

**L** = Low – Approximately 1/3 of the total program/department/division's initiatives by resource category

#### **A. Initiative:** Laboratory Technician Contract

**Initiative ID:** CHEM1401

**Link to Data:** Budget, Classified Staff

**Expected Benefits:** Increased instructional materials available to students for multiple trials, increased support to instructors to keep their classroom time for teaching and direction contact and support to students

**Goal:** Restore the contract for the laboratory technician to 12 months (\$6,000)

**Performance Indicator:** Increased instructional materials for laboratory sections

**Timeline:** 2013-2014

**Funding Resource Category:** Staffing Funds

**Ranking:** R

#### **B. Initiative:** Supplementary Instruction (SI) and increased tutoring for ChemV01A

**Initiative ID:** CHEM1302

**Link to Data:** CSLO assessment for ChemV01A, retention and success data for ChemV01A

**Expected Benefits:** Increased performance on CSLO assessments, retention, and student success, increase in student learning and support

## Chemistry Program Review

2012-2013

**Goal:** Implement an SI program for ChemV01A courses (\$4,000) and increase the budget for chemistry-specific tutors at the LRC (\$2,000)

**Performance Indicator:** Increased student performance on CSLO assessments

**Timeline:** 2013-2014

**Funding Resource Category:** Staffing Funds

**Ranking:** M

**C. Initiative:** Replacement Equipment Allocation/Increase in Supply Budget

**Initiative ID:** CHEM1403

**Link to Data:** Inventory

**Expected Benefits:** Increased student learning, adherence to expected laboratory curriculum for articulation

**Goal:** Allocation of funds to replace broken equipment each year to keep the amount of functional pieces available for instructional purposes constant, increase in supply budget to ensure enough resources for all students in the laboratory sections to perform the full spectrum of experiments. The department's supply budget has not been increased in the last five years and has been depleting our inventories of chemicals, glassware, and other consumables. Our inventories are at critically-low levels, and without augmentation to the budget, the department will be unable to supply certain experiments and some lab sections may need to be canceled as a result. (\$4,000)

**Performance Indicator:** Enough functional equipment available to allow each student in the department's lab sections to use it, enough supplies to be able to allow students to work individually without delays

**Timeline:** 2013-2014

**Funding Resource Category:** Supply Funds

**Ranking:** R

**D. Initiative:** Increase standardization of student assessment in multi-section classes.

**Initiative ID:** CHEM1304

**Link to Data:** SLO Data, Success Data

**Expected Benefits:** Students would have a similar classroom experience and have similar preparation for more advanced classes

**Goal:** To align curriculum, requirements, and expectations between instructors (\$0)

**Performance Indicator:** Similar results in individual SLO assessments between different instructors for the same course

**Timeline:** 2013-2014

**Funding Resource Category:** No new resources needed

**Ranking:** L

**E. Initiative:** Develop an AS in Chemistry degree

**Initiative ID:** CHEM1405

**Link to Data:** None

**Expected Benefits:** Increase in students' ability to transfer or find employment with the AS degree (\$0)

**Goal:** Establish an AS degree in Chemistry in the department to allow students to graduate with it

**Performance Indicator:** Program completion and graduation rates

## Chemistry Program Review

### 2012-2013

**Timeline:** 2013-2014

**Funding Resource Category:** No new resources needed

**Ranking:** L

**F. Initiative:** NMR purchase

**Initiative ID:** CHEM1406

**Link to Data:** None

**Expected Benefits:** Hands-on experiential learning for students in ChemV12AL and ChemV12BL, ability to offer ChemV05, Quantitative Analysis. Interpreting NMR spectra is a required learning outcome in the organic chemistry laboratory sequence, which for now is done through print-outs and copies of known compounds. Actually having an NMR instrument in the department will allow students to test their own isolated samples, have unique unknowns to determine, and to learn how to use the NMR instrument itself as a requisite to the class

**Goal:** Purchase and maintain an NMR instrument (\$125,000) for use in the above courses

**Performance Indicator:** Students' increased learning in the organic chemistry laboratory sequence, ability to offer ChemV05

**Timeline:** 2013-2014

**Funding Resource Category:** Equipment-non computer

**Ranking:** M

**G. Initiative:** Full-time Faculty Hire

**Initiative ID:** CHEM1407

**Link to Data:** Staffing

**Expected Benefits:** Each year the department has great difficulty finding qualified adjunct instructors to staff all of our sections. This is exacerbated by enrollment steadily increasing and all sections being heavily impacted. FY13 saw the FT faculty ratio fall to 2.51 of 9.96 (25%) with planned leaves and a sabbatical, making it a huge stretch to cover all the department's sections. Even with the full complement of four full-time faculty, all full-time are teaching overload and the adjunct faculty teaching to their maximum allowed capacity, and the department still must hire new adjunct faculty almost every term. To avoid having the constant danger of having to cancel sections due to staffing shortages as well as the enhanced quality of instruction that comes with a full-time faculty member, the department would request an additional full-time faculty member.

**Goal:** Hire an additional full-time faculty member (\$100,000)

**Performance Indicator:** Better and more complete staffing of the department's sections, higher quality of instruction

**Timeline:** 2013-2014

**Funding Resource Category:** Staffing Funds

**Ranking:** M

### Section VI – Process Assessment

**A. How have the changes in the program review process this year worked for your area?**

## Chemistry Program Review

2012-2013

Having the data separately rather than embedded in the document has made it a much more streamlined process. The directions given in each section were very clear and easy to follow. The “fill in” style format of the Word document made it extremely convenient to complete the report.

### B. How would you improve the program review process based on this experience?

Provide copies of the previous year’s program review for reference. Definitions of the acronyms in the data (i.e., FTES vs. FTEF) as a separate document or instructions sheet would be helpful. While the Word document format made it easy to work on the document, the formatting was difficult and hard to keep consistent. More drop-down menus or fillable areas would make it easier for inputting data and analysis.

### C. Appeals

After the program review process is complete, your program has the right to appeal the ranking of initiatives (i.e. initiatives that should have been ranked high but were not, initiatives that were ranked high but should not have been), the division’s decision to support/not support program discontinuance, or the process (either within the department/program or the division) itself.

If you choose to appeal, please complete the Appeals form (Appendix E) that explains and supports your position. Forms are located at the Program Review VC website.

The appeal will be handled at the next higher level of the program review process.

## VII – Submission Verification

**Program/Department:** Chemistry

**Preparer:** Malia Rose

**Dates met (include email discussions):** E-mail discussion: Sept. 19-27, Meeting: Sept. 27

**List of Faculty who participated in the program Review Process:** Joy Kobayashi, Joe Selzler, Bob Flesher

**Preparer Verification:** I verify that this program document was completed in accordance with the program review process.

**Dean Verification:** I verify that I have reviewed this program review document and find it complete. Dean may also provide comments (optional):

Chemistry Program Review  
2012-2013

## Program Review Process Map

**I .** Status report and accomplishments from prior year

**II.** Description

**III(b).** Other program goals and initiatives

(Innovations, regulations, legislation, new technology, industry standards, professional development, or advisory committee recommendations, etc.)

**IV.** Program vitality-(Academic Senate rubric)

**V.** Summary of initiatives and requests  
Minority reports if any

**VI.** Process assessment

**VII.** Verification of review

## Chemistry Program Review 2012-2013

### Program Review Resource Initiatives Guidelines

#### WHAT TO LEAVE OUT

*The purpose of this document is to clarify what kinds of resource requests should NOT be included in the Program Review Document as initiatives.*

The table below summarizes the types of resources that DO NOT need to be included in the Department Plans. The "Who to Contact" column lists who to contact when the resources or services are needed.		
<b>Excluded Items</b>	<b>Who to Contact</b>	<b>Explanation</b>
Safety Issues, including but not limited to broken chairs or desks, etc. that can be resolved through the normal process.	Dean, M&O or Appropriate Office	All safety issues should be immediately reported to the Dean, M&O, or appropriate department.
EAC Accommodations that can be resolved through the normal process.	DSPS and Dean	Any accommodation should have the guidance of the DSPS office.
Routine M&O maintenance & repair (light fixtures not working, holes in walls, locks, cleaning, broken desks or chairs, etc.) that can be resolved through the normal process.	M&O or Division Office	Complete an email request to <a href="mailto:vcmaintenance@vcccd.edu">vcmaintenance@vcccd.edu</a> or notify your division office so they can handle for you.
Cyclical Maintenance (painting, flooring, carpet shampooed, windows, etc.) that can be resolved through the normal process.	M&O or Division Office	Complete an email request to <a href="mailto:vcmaintenance@vcccd.edu">vcmaintenance@vcccd.edu</a> or notify your division office so they can handle for you.
Classroom technology equipment repairs (projector light bulb out, video screen not working, computer not working, existing software updates) that can be resolved through the normal process.	Campus Technology Center or Division Office	Complete an email request to <a href="mailto:vchelpdesk@vcccd.edu">vchelpdesk@vcccd.edu</a> or notify your division office so they can handle for you.
Section Offerings/ Change of classrooms	Dean/Department Chair	Dean will take requests through the enrollment management process.
Substitutes	Dean	Dean will process in accordance with existing guidelines
Conferences, Meetings, Individual Training	Professional Development Committee	Requests should first be approved by the PDC and only go through program review if costs cannot be covered. Appendix-B

### Program Review Resource Initiatives Guidelines

## Chemistry Program Review 2012-2013

### WHAT TO LEAVE IN

*The purpose of this document is to clarify what kinds of resource requests should be included in the Program Review Document as initiative.*

<p>Faculty and Staff from each department will meet as a division to prioritize initiatives resulting from the Program Review process. The initiatives will then go to each respective governance groups such as Staffing Priorities, Technology Committee, Budget Resource Council, etc., for further prioritization. Administrative Council and the Executive Team will develop the final prioritized list and distribute for implementation.</p>		
<b>Included Items</b>	<b>Committee Group</b>	<b>Explanation</b>
Replacement of classroom furniture	Facilities Oversight Group	Only when it is an entire classroom/lab/office at a time or a safety or disability issue that has not been resolve through the normal process.
Upgrade and/or replacement of computer and other technological equipment	Technology Committee	These items will go on to a list for replacement or upgrade per the technology plan.
New Equipment/Furniture/classroom items (i.e. microscope, etc.)	Budget Resource Council	These items must be approved included in a plan to improve student learning and/or services.
Buildings/Office Space (new renovation, modernization)	Division Dean	The division dean will work with Administrative Council and the Fog Committee to pursue the projects.
New Software	Technology Committee	These items must be approved included in a plan to improve student learning and/or services.
New Faculty Positions	Faculty Staffing Priorities	Requests for new positions will compiled on a list and sent to the FSP committee.
New Classified Positions/or increase in percentage of existing positions.	Classified Staffing Priorities	Requests for classified positions will compiled on a list and sent to the CSP committee.
New Programs/certificates	Curriculum Committee	These program/certificates must be approved by the curriculum committee.
Training and Professional Development above normal	Professional Development/ Budget Resource Council	These are items over and above what the PDC can provide.
Expansion/Conversion to Distance Learning	Dean of Distance Learning and Distance Learning Committee	Requests will be compiled and sent to the committee process for discussion.
Service Agreements	Budget Resource Council	Requests must include justification.
Instructional Materials and Office Supplies/ Advertising/Student Workers/Printing/Duplicating	Budget Resource Council/Dean	These items must include a compelling reason and be above what the Appendix-C budget will allow.

### Rubric for Instructional Program Vitality-Academic (non-CTE)

## Chemistry Program Review 2012-2013

The purpose of this rubric is to aid a program in thoughtful, meaningful and reflective self-evaluation. This rubric is also a defensible and objective way at looking at program viability and efficacy. This rubric should not be used as the mechanism to justify funding requests or for resource allocation. Lastly, a low score on this rubric does not preclude a program from requesting documented and necessary resource requests in other parts of this program review document.

### Academic programs:

Point Value	Element	Score
Up to 6	<b>Enrollment demand</b> <sup>1</sup>	
	A "6" would be the ability to fill 100% of sections prior to the start of the semester.	
	A "5" would be the ability to fill 95% or greater of class sections prior to the start of the semester for the past two terms.	
	A "4" would be the ability to fill 90% or greater of class sections prior to the start of a semester for the past two terms.	
	A "3" would be the ability to fill 85% or greater of class sections prior to the start of a semester for the past two terms.	3
	A "2" would be the ability to fill 80% or greater of class sections prior to the start of a semester for the past two terms.	
	A "1" would be the ability to fill 75% or greater of class sections prior to the start of a semester for the past two terms.	
	A "0" would be the ability to fill less than 75% of class sections prior to the start of a semester for the past two terms.	

Sufficient capital / human resources to maintain the program, as defined by:		
Up to 3	<b>Ability to find qualified instructors</b>	
	A "3" would indicate that no classes have been canceled due to the inability to find qualified instructors.	3
	A "2" would indicate that rarely but occasionally have classes been canceled due to the inability to find qualified instructors.	
	A "1" would indicate that a significant number of sections in the past year have been canceled due to the inability to find qualified instructors.	
	A "0" would indicate that classes are not even scheduled due to the inability to find qualified instructors.	

Up to 3	<b>Financial resources, equipment, space</b>	
	A "3" would indicate that the program is fully supported with regards to dedicated class / lab space, supplies and equipment.	3
	A "2" would indicate that the program is partially supported with regards to dedicated class / lab space, supplies and equipment	
	A "1" would indicate that the program is minimally supported with regards to dedicate class / lab space, supplies and equipment.	
	A "0" would indicate that there is no college support with regards to class / lab space, supplies and equipment.	

Appendix-C

Up to 4	<b>Agreed-upon productivity rate</b> <sup>2</sup>	
	A "4" would indicate that a program has met or exceeded its productivity rate.	4
	A "3" would indicate that a program is at 90% or greater of its productivity rate.	
	A "2" would indicate that a program is at 80% or greater of its productivity rate.	
	A "1" would indicate that a program is at 70% or greater of its productivity rate.	
	A "0" would indicate that a program is at less than 70% of its productivity rate.	

Up to 4	<b>Course completion rate</b> <sup>3</sup>	
---------	--	--

<sup>1</sup> Enrollment demand is determined by the ability to fill classes.

<sup>2</sup> Productivity rate is defined as **WSCH/FTEF** as determined by the program faculty at the college.

## Chemistry Program Review 2012-2013

	A "4" would indicate that the program's course completion rate is greater than 5 percentage points or greater than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "3" would indicate the program's course completion rate is equal to or greater than the most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	3
	A "2" would indicate that a program's course completion rate is up to 2 percentage points less than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "1" would indicate that a program's course completion rate is up to 5 percentage points less than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "0" would indicate that a program's course completion rate is greater than 5 percentage points less than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	

<b>Up to 3</b>	<b>Success rate <sup>4</sup></b>	
	A "3" would indicate that the sum of the program's course success rates for the past academic year is greater than the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	3
	A "2" would indicate that the sum of the program's success rates for the past academic year is within 4 percentage points of the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "1" would indicate that the sum of the program's success rates for the past academic year is within 8 percentage points of the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "0" would indicate that the sum of the program's success rates for the past academic year is lesser than 8 percentage points of the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	

<b>Up to 3</b>	<b>Ongoing and active participation in SLO assessment process</b>	
	A "3" would indicate that all required courses, programs and institutional level SLOs as indicated by the programs SLO mapping document found in TracDat have been assessed on a regular and robust manner within the past academic year.	3
	A "2" would indicate that 95% of all required courses, programs and institutional level SLOs as indicated by the program's SLO mapping document have been assessed on a regular and robust manner within the past academic year.	
	A "1" would indicate that 90% of all required courses, programs and institutional level SLOs as indicated by the program's SLO mapping document have been assessed on a regular and robust manner within the past academic year.	
	A "0" would indicate than less than 90% of all required courses, programs and institutional level SLOs as indicated by the program's SLO mapping document have been assessed on a regular and robust manner within the past academic year.	Appendix-C

Note rationale on next page.

In no more than two to three sentences, supply a narrative explanation, rationale or justification for the score you provided, especially for programs with a score of less than 22:

The lowest score for the department was enrollment: however, even sections that do not completely fill by the start of the semester are usually 5-10 seats for lectures, 3-5 seats for labs from being completely full. In all other areas, the department continues to be very consistent with higher than school average retention and success rates, as well as a robust SLO assessment cycle in which all full-time faculty

<sup>3</sup> As defined by the RP Group, the course completion rate is the "percentage of students who do not withdraw from class and who receive a valid grade."

<sup>4</sup> As defined by the RP Group, the success rate is "the percentage of students who receive a passing/satisfactory grade" notation of A, B, C, P, IB, or IC.

## Chemistry Program Review

### 2012-2013

Score interpretation, academic programs:

<b>22-26</b>	Program is current and vibrant with no further action recommended
<b>18-21</b>	Recommendation to attempt to strengthen program
<b>Below 18</b>	Recommendation to consider discontinuation of the program

## Chemistry Program Review 2012-2013

### Rubric for Instructional Program Vitality-CTE

The purpose of this rubric is to aid a program in thoughtful, meaningful and reflective self-evaluation. This rubric is also a defensible and objective way at looking at program viability and efficacy. This rubric should not be used as the mechanism to justify funding requests or for resource allocation. Lastly, a low score on this rubric does not preclude a program from requesting documented and necessary resource requests in other parts of this program review document.

#### CTE programs:

Point Value	Element	Score
Up to 6	<b>Enrollment demand / Fill rate</b> <sup>5</sup>	
	A "6" would be the ability to fill 100% of sections prior to the start of the semester.	
	A "5" would be the ability to fill 95% or greater of class sections prior to the start of the semester for the past two terms.	
	A "4" would be the ability to fill 90% or greater of class sections prior to the start of a semester for the past two terms.	
	A "3" would be the ability to fill 85% or greater of class sections prior to the start of a semester for the past two terms.	
	A "2" would be the ability to fill 80% or greater of class sections prior to the start of a semester for the past two terms.	
	A "1" would be the ability to fill 75% or greater of class sections prior to the start of a semester for the past two terms.	
	A "0" would be the ability to fill less than 75% of class sections prior to the start of a semester for the past two terms.	

Sufficient capital / human resources to maintain the program, as defined by:		
Up to 3	<b>Ability to find qualified instructors</b>	
	A "3" would indicate that no classes have been canceled due to the inability to find qualified instructors.	
	A "2" would indicate that rarely but occasionally have classes been canceled due to the inability to find qualified instructors.	
	A "1" would indicate that a significant number of sections in the past year have been canceled due to the inability to find qualified instructors.	
	A "0" would indicate that classes are not even scheduled due to the inability to find qualified instructors.	
Up to 3	<b>Financial resources, equipment, space</b>	
	A "3" would indicate that the program is fully supported with regards to dedicated class / lab space, supplies and equipment.	
	A "2" would indicate that the program is partially supported with regards to dedicated class / lab space, supplies and equipment	
	A "1" would indicate that the program is minimally supported with regards to dedicate class / lab space, supplies and equipment.	
	A "0" would indicate that there is no college support with regards to class / lab space, supplies and equipment.	

Up to 4	<b>Agreed-upon productivity rate</b> <sup>6</sup>	
	A "4" would indicate that a program has met or exceeded its productivity rate.	
	A "3" would indicate that a program is at 90% or greater of its productivity rate.	
	A "2" would indicate that a program is at 80% or greater of its productivity rate.	
	A "1" would indicate that a program is at 70% or greater of its productivity rate.	
	A "0" would indicate that a program is at less than 70% of its productivity rate.	

<sup>5</sup> Enrollment demand is determined by the ability to fill classes.

<sup>6</sup> Productivity rate is defined as **WSCH/FTEF** as determined by the program faculty at the college.

## Chemistry Program Review 2012-2013

<b>Up to 3</b>	<b>Program Completion</b>	
	A "3" would indicate that the program has granted 25 or greater combined degrees, certificates and proficiency awards over the past four academic years.	
	A "2" would indicate that the program has granted 20-24 combined degrees, certificates and proficiency awards over the past four academic years.	
	A "1" would indicate that the program has granted 15-19 combined degrees, certificates and proficiency awards over the past four academic years.	
	A "0" would indicate that the program has granted fewer than 14 combined degrees, certificates and proficiency awards over the past four academic years.	

<b>Up to 3</b>	<b>Employment Outlook for Students/Job Market Relevance</b>	
	A "3" would indicate that the employment outlook for students in the program is greater than the projected county-wide employment average for the next three years and/or "leavers" of the program make more money in their jobs based on taking courses at the college (with or without having completed a degree) than had they not taken courses at the college.	
	A "2" would indicate the employment outlook for students in the program is about average with the projected county-wide employment average for the next three years.	
	A "1" would indicate that the employment outlook for students in the program is less than the projected county-wide employment average for the next three years.	
	A "0" would indicate that the employment outlook for students in the program is significantly less than the projected county-wide employment average for the next three years.	

<b>Up to 3</b>	<b>Success rate <sup>7</sup></b>	
	A "3" would indicate that the sum of the program's course success rates for the past academic year is greater than the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "2" would indicate that the sum of the program's success rates for the past academic year is within 4 percentage points of the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "1" would indicate that the sum of the program's success rates for the past academic year is within 8 percentage points of the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "0" would indicate that the sum of the program's success rates for the past academic year is lesser than 8 percentage points of the most recent college-wide course success rate metric found in the annual "VC Institutional Effectiveness Report."	

<b>Up to 4</b>	<b>Course completion rate <sup>8</sup></b>	
	A "4" would indicate that the program's course completion rate is greater than 5 percentage points or greater than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "3" would indicate the program's course completion rate is equal to or greater than the most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "2" would indicate that a program's course completion rate is up to 2 percentage points less than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	Appendix-D
	A "1" would indicate that a program's course completion rate is up to 5 percentage points less than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	
	A "0" would indicate that a program's course completion rate is greater than 5 percentage points less than most recent college-wide course completion rate metric found in the annual "VC Institutional Effectiveness Report."	

<b>Up to 3</b>	<b>Ongoing and active participation in SLO assessment process</b>	
----------------	---	--

<sup>7</sup> As defined by the RP Group, the success rate is "the percentage of students who receive a passing/satisfactory grade" notation of A, B, C, P, IB, or IC.

<sup>8</sup> As defined by the RP Group, the course completion rate is the "percentage of students who do not withdraw from class and who receive a valid grade."

## Chemistry Program Review

### 2012-2013

A "3" would indicate that all required courses, programs and institutional level SLOs as indicated by the programs SLO mapping document found in TracDat have been assessed on a regular and robust manner within the past academic year.	
A "2" would indicate that 95% of all required courses, programs and institutional level SLOs as indicated by the program's SLO mapping document have been assessed on a regular and robust manner within the past academic year.	
A "1" would indicate that 90% of all required courses, programs and institutional level SLOs as indicated by the program's SLO mapping document have been assessed on a regular and robust manner within the past academic year.	
A "0" would indicate than less than 90% of all required courses, programs and institutional level SLOs as indicated by the program's SLO mapping document have been assessed on a regular and robust manner within the past academic year.	

In no more than two to three sentences, supply a narrative explanation, rationale or justification for the score you provided, especially for programs with a score of less than 22:

Score interpretation, academic programs:

**27-32** Program is current and vibrant with no further action recommended

**22-26** Recommendation to attempt to strengthen program

Below **22** Recommendation to consider discontinuation of the program

## Chemistry Program Review 2012-2013

### APPEAL FORM

(Due to Office of Institutional Effectiveness by November 8)

The program review appeals process is available to any faculty, staff, or administrator who feels strongly that the prioritization of initiatives (i.e. initiatives that were not ranked high but should have been, initiatives that were ranked high but should not have been), the decision to support or not support program discontinuance, or the process followed by the division should be reviewed by the College Planning Council.

Appeal submitted by: (name and program) \_\_\_\_\_

Date: \_\_\_\_\_

Category for appeal:     Faculty  
                                    Personnel – Other  
                                    Equipment- Computer  
                                    Equipment – Other  
                                    Facilities  
                                    Operating Budget  
                                    Program Discontinuance  
                                    Other (Please specify)

Briefly explain the process that was used to prioritize the initiative(s) being appealed:

Briefly explain the rationale for asking that the prioritization of an initiative/resource request be changed:

**Appeals will be heard by the College Planning Council on November 9, 2011 at its regularly scheduled meeting (3:00 – 5:00 p.m.). You will be notified of your time to present.**