INSTRUCTIONAL PROGRAMS AND AREAS
PROGRAM REVIEW/PLANNING AND EVALUATION PROCESS

QUESTIONNAIRE FOR INSTRUCTIONAL PROGRAMS

INSTRUCTIONS:

Complete all sections as instructed. Click the shaded sections to type your answer.
When completed, please save your file and e-mail it as an attachment to tanya_hanton@westvalley.edu.

A. INTRODUCTORY QUESTIONS

1. Program Name: ***Chemistry***

2. Person(s) completing the questionnaire: *Blaine Harrison*

3. Date of completion: *Click once here and type your response*

4. What are the primary purposes of the program? Check all that apply.

- ☒ WVC Degrees and Certificates
- ☒ Transfer Courses
- ☒ WVC General Education
- ☐ Lifelong Learning/Life Enrichment
- ☐ Occupational / Vocational Courses
- ☐ Student Support Services
- ☐ Academic Support Services
- ☐ Administrative Functions

5. In one paragraph, how does the program further the College's mission and goals? (only new information need be added)

Same as spring 07 program review.

6. In one paragraph, what significant events have affected or impacted the program since the last program review?

The foliowng factors have affected the Chemistry Department:

1) *A permanent part time classified position has been created in the stockroom.*
2) *The college has provided no model or procedure for funding our department. Currently we are funded for one semester.*

B. DATA ELEMENT ANALYSIS SECTION (ANALYSIS AND RESPONSE)

1. Using the enrollment data from Table 1 from previous program review, add or revise as appropriate.

a) What significant trends are revealed in the data?
b) What factors might contribute to any program differences compared to the College data?
c) What conclusions do you draw from this analysis that could form the basis for an action, objective or request for resources?

The enrollment data of headcount and FTE of the Chemistry Department parallels that of the college and does not deviate to any appreciable degree. This demonstrates that the department is in compliance with the rest of the college.

2. Using the demographic data from Table II from previous program review, add or revise as appropriate.

a) What significant trends are revealed in the data?
b) What factors might contribute to any program differences compared to the College data? See attachment for college-wide statistics.
c) What conclusions do you draw from this analysis that could form the basis for an action, objective or request for resources?

The age-distribution for chemistry courses differs from that of the college student body with the majority of students in chemistry being in the younger age groups (<21 and 21-25). While these age groups represent about 60% of the student body in chemistry, these age groups make up 78% of our enrollment. The higher enrollment of younger students is probably a result of the high transfer rate of chemistry students to four year institutions.

The ethnicity of the Chemistry Department defers from the college's (18%) in that it has a higher percentage of Asian students (28%) and less white students (51% vrs 58%). This has no direct impact on the department.

3. Using the success data from table III from previous program, add or revise as appropriate.

a) What significant trends are revealed in the data?
b) What factors might contribute to any program differences compared to the College data?
c) What conclusions do you draw from this analysis that could form the basis for an action, objective or request for resources?

The Chemistry Department has a success rate that is approximately 8-9% below that of the college's. There are several contributing factors to this trend. Chemistry is a vigorous and difficult subject and coupled with student's lack of motivation and poor study they tend to drop the course or fail. Inconsistent and variable counseling puts students in the wrong courses where they flounder. For example non-science majors should never be compelled to take chem 1A.

To increase success rates the department encourages students to take full advantage of the resources available. These resources include the tutoring center and office hours and chem. 50.

The department has also instigated an informal placement exam in chem. 1A to access their potential of success. Students who do not score well are encouraged to take chem. 2.

The success rate in the future is probably not going to change in the near future. In order to absorb the loss of students the department has to fill the classes so that enough students will go on to the next classes in the series. To achieve this goal the department has to keep a robust and up to date program by making sure equipment is up to date and that the labs are contemporary. This is dependent on the funding for the departments infrastructure which has been erratic and insufficient to date.

4. Are there any data or factors (e.g. integration of technology; college, district, or state expectation or mandates) concerning staffing in the program, that suggest a need for increasing or decreasing program staff (e.g. permanent and associate FTE, permanent and hourly classified staffing or administrative staffing)?

A permanent part time position was created for the stockroom but the funding for the remaining hourly staff remains insufficient, and at the discretion of the union that requires the elimination of temporary positions in favor of permanent.

C. CURRICULUM SECTION (ANALYSIS AND RESPONSE)

1. Based on your program's curriculum information, as published in the most recent West Valley College catalog, what curriculum changes are anticipated in the next three years? (These changes could include major course revisions, curriculum deletions, new courses, revised or new options within a program, or proposed new programs.)

Changes to curriculum include the possible discontinuation of chem.. 10, the initiation of an instrument class. Chemistry 5 will be discontinued.

2. The attached excel document shows classes that have not been offered since Spring 04. Please list the courses you intend to submit to the Curriculum Committee by February 8th for de-activation prior to publication of the 08/09 catalog.

Chemistry 5 will be discontinued.

3. Considering the new course and program level Student Learning Outcomes that have been developed since the last program review:

   a) What relevant findings have been derived through the SLO assessment process since the last program review?
   b) What changes have been implemented, or are planned, based on the findings since the last program review?
   c) What conclusions do you draw from this analysis that could form the basis for an action, objective or request for resources?

NOTE: Please contact LeAnn McGinley (741-2402), Assessment Coordinator with any questions concerning SLOs.

The SLO assessment has shown that our department is doing a good job on teaching core curriculum items. However, some results are difficult to draw accurate conclusions from since in the Chemistry Department's poor students tend to fail and drop out of the course. This causes fluctuations in the data because by the conclusion of the course only "good" students are contributing to the data pool.

The Chemistry Department will continue to asses the students and try to find a more efficient method of assessing student outcomes.

D. EXTERNAL INFLUENCES SECTION (ANALYSIS AND RESPONSE)

1. If applicable, considering the effects of external influences on the program's purposes and goals:

   a) How do accreditation requirements, government regulations, advisory boards, labor market demand, transfer institution articulations or other external factors affect the program?
   b) How might these influences form the basis for an action, objective, or request for resources?

a) Safety is a major concern in both the labs and in the stockroom so OSHA and its regulations fundamentally effect the operation of the department The American Chemical Society sets standards and outlines the areas of the field that should be covered. Transfer guidelines and articulation from four year institutions further define the course work and specific areas that are taught. If the prerequisites change at medical schools this directly impacts the department and its enrollment.

The current conditions of the facilities in the labs are in poor condition and could be in violation of safety standards set by the state and other governing bodies. This includes the fume hoods which have been tested to be insufficient, natural gas leaks at lab stations and the use of mercury thermometers. The storage and handling of chemicals in the stockroom is also a major concern and needs to be upgraded.

b) In order to be compliant with these outside guidelines the department must run the labs safely and efficiently. This dictates the labs as well as the stockroom are well funded and staffed. If chemicals and supplies can not be purchased then the "wet" labs will be no longer offered and then the department will be in danger of losing accreditation and articulation.

Hopefully, the planned remodel of the science wing will alleviate many of the problems in facilities.

E. STUDENT FACTORS SECTION (ANALYSIS AND RESPONSE)

1. What program changes or initiatives has the program implemented in the last three years to meet the needs of its student population?

The program started Chemistry 10 to meet the needs of non-science majors. The chem. department initiated a computer room and run computer based labs. There is no set procedure for acquiring software. This has led to the probable discontinuation of computer based labs. In the remodel plans there is no allocated space to continue this service because it requires substantial space, infrastructure and funds.

F. SUMMARY AND CONCLUSION SECTION:

1. General conclusions and summary statement.

The Chemistry Department is unique in several ways:

1) Most of the courses offered are in sequence. For instance chem 2 leads to 1A,!B, 12A and chem. 12B. A disruption in any of these courses leads to a ripple effect in which the whole sequence suffers. Of high priority is to keep the integrity of the entire program functioning by having a healthy and robust program.

2) The laboratory sections are an integral part of the department and assures that the department meets requirements for accreditation and transferability. All of the courses except for chem. 50 have a lab compliment.

3) In order to sustain the labs the department requires a large amount of infrastructure. The stockroom, that maintains and operates these labs needs to be stocked with chemicals, glassware and equipment. It also requires trained staff to function. To meet these requirements the department requires a large and stable budget which has proven to be elusive. A permanent part time position has been created that has helped to some extent.

4) Due to budget problems the Chemistry Department will simplify labs making them less costly and will fall back on labs that are less contemporary. Modern labs such as computer driven labs or labs dependent on current instrumentation are expensive and require a sufficient infrastructure. Our infrastructure has continuously decreased and these labs can not be supported.

2. Program Strengths:

The program strengths are that it is consistent in offering high quality courses that prepare students for transferring to four year institutions. The Chemistry Department has also been active in developing new and modern laboratory techniques. The lab manual followed by several classes including chem 2 and chem 30A was developed at WVC. Updating this manual to include chem 30B is currently underway. In 2004 the department conducted an in house survey which reflects the strengths and goals of the program and still reflect the qualities and issues that are of vital importance.

The chemistry student survey indicated that 92% of the students are planning to finish their studies at a 4-year college. In light of these results, the Chemistry Department must match and complement the demands and curriculum being offered by 4-year institutions. This entails that faculty must stay current in their respective studies and that the department obtains instrumentation that is in current use in academia and industry. Of special concern are the facilities and instrumentation in the laboratory. If students are not able to gain hands-on experience with contemporary equipment, they will not be able to meet the demands of a 4-year institution and the demands of research in academic or industrial environments.

As previously mentioned, the main focus of the department is to facilitate transfer of it's students to 4-year schools. To this end, all of the courses offered (except chem 50) are transferable to 4-year schools and are consistent in content and level with most 4-year schools. This is in accordance with the fact that 59% of the students responded that they were taking chemistry as a prerequisite for their major and not just to fulfill GE requirements.

3. Program Challenges:

The greatest threat to the Chemistry Department is the lack of funding and the erratic methods of achieving that funding. These problems have the following impact:

1) The department can not make long term goals or develop new curriculum because the budget is not stabilized. The part time help in the stockroom is not consistent leading to safety and efficiency issues.

2) Of major concern to the Chemistry Department is the state of repair and quality of the chemistry facilities. This includes the building and the equipment in the labs. The laboratories have never been remodeled since the beginning of the college. This leads to problems due to the fact that the field of chemistry is constantly undergoing changes and our department cannot keep up with these developments due to inadequate equipment and facilities. For example, the wiring in the laboratories is inadequate and does not support more than one hot plate in a fume hood without the circuit breaker cutting out. Also there is no inert gas that is piped into the organic lab. The hoods, that are supposed to remove dangerous and toxic chemical vapors, are operating at minimal efficiency. These facility issues not only make it difficult to teach modern labs, but they also create an unsafe environment for both students and faculty.

3) Keeping up with modern technology is non-existent because our money and recourses are put into keeping the minimum operation of the labs going.

4) The rising cost of chemicals and maintenance of equipment continues to increase in the face of a stagnant and decreasing budget.

5) Replacement of unsafe or damaged equipment is becoming progressively more difficult.

6) The department will try to retain accreditation while at the same time decrease the variety of labs, the amount of labs, and the sophistication of the labs.

G. ACTIONS AND OBJECTIVES SECTION

Over the next three years, what are the program's timelines (in terms of predicted initiation and completion dates) for the stated actions or objectives?

The department will continue to seek sustainable and adequate funding from the college. The primary goal of the program is to be able to buy chemicals, maintain equipment, staff the stockroom, replace broken glassware and to have adequate and safe facilities.

The department is trying to update the facilities, equipment, and lab practices.

In addition the WVC lab manual is being updated to include chem. 30B. Currently it can only be used in chem. 2 and 30A.

Timelines

Which of these actions or objectives would be initiated and completed within the coming year, given adequate resources?

With adequate funding the department can continue to offer the current lab offerings. Most of the chemistry objectives could be achieved in a year with adequate funding. The updating of the labs would take longer depending on funding of supplies and equipment.

H. RESOURCE REQUESTS 2006-2007

1. Please indicate if any of the resource requests identified in the previous program review were funded through one or more of the various WVMCCD resource allocation processes that were available in 06 – 07 (e.g. FTE allocation, classified staff, one time funding, budget augmentation, facilities, Land Corporation):

Please complete the following table (leave blank if the answer is not applicable):

	FUNDED by WVMCCD?
Full-time faculty FTE: *Click once here and type your response*	☐ Yes ☐ No ☐ Partially
Associate faculty FTE: *Click once here and type your response*	☐ Yes ☐ No ☐ Partially
Classified Staff FTE: *A permanent part time position was fulfilled for the stockroom.*	☒ Yes ☐ No ☐ Partially
Classified Hourly (in dollars): *$3498*	☒ Yes ☐ No ☐ Partially
Administrative Staff FTE: *Click once here and type your response*	☐ Yes ☐ No ☐ Partially
Facilities (brief narrative description):	☐ Yes ☐ No ☐ Partially
Equipment (brief narrative description with estimated total cost): *$2931 This is for all of the equipment in the labs.*	☒ Yes ☐ No ☐ Partially
Supplies (brief narrative description with estimated total cost): *$7746 This is for all of the chemicals and glassware in the labs.*	☒ Yes ☐ No ☐ Partially
Staff Development (brief narrative description): *Click once here and type your response*	☐ Yes ☐ No ☐ Partially
Other (please specify): *Click once here and type your response*	☐ Yes ☐ No ☐ Partially

2. What have you been able to accomplish as a result of the resource obtained?
(e.g. improved retention success and persistence, improved equity, new SLOs, higher enrollment, new online or satellite campus classes….)

NOTE: The Program Review Committee realizes that in some cases, accomplishments and changes resulting from resource acquisition are too recent to be measurable. The current Program Review process is only one year old. Future reviews of funding requests will focus on accomplishments and change occurring over a two-year period.

We have been able to redistribute some of the funds. However, this redistribution still did not get the department to be adequately funded. These funds are to keep the Chemistry Department going so we have accomplished our goals by offering chemistry classes at our current level but as costs go up and the differed costs become due this will not be possible.

I. RESOURCE REQUESTS 2007-2008

1. What **new or additional** resources are required to accomplish the stated actions and objectives?

Please complete the following table (leave blank if the answer is zero or none):

Full-time faculty FTE *Click once here and type your response*

Associate faculty FTE *Click once here and type your response*

Classified Staff FTE: *Click once here and type your response*

Classified Hourly (in dollars): *Need $2072. The department was funded for $3498 and needs $5570.*

Administrative Staff FTE: *Click once here and type your response*

Facilities (brief narrative description): *Facilities are in poor disrepair. Items such as DI water, hoods, inert gas, natural gas etc. all need to be replaced and pose safety hazards. However the building is slated for remodel so these needs should be addressed.*

Equipment (brief narrative description with estimated total cost): *Need an additional $1169 The department was given $2931 and the budget for the department is $4100. This is for all the equipment that goes into the labs. Low quality equipment leads to poor labs and safety issues. There are too many items to list here and the college has requested that I do not send detailed and itemized information as an attached file. This information is available in the complete chemistry budget review.*

Supplies (brief narrative description with estimated total cost): *Need an additional $1254. The current budget for the Chemistry Department is $7746. This was a reduction from our original and needed $9000 budget. This is for the chemicals, glassware, instruments etc. There are too many items to list here and the college has requested that I do not send detailed and itemized information as an attached file. This information is available in the complete chemistry budget review.*

Staff Development (brief narrative description): *Click once here and type your response*

Other: *The requests above are for the reinstatement of a functioning chemistry budget and do not include upgrades or modernization of any of the labs. Eventually the department would like to be current with academic and industry standards. Example would be to purchase temperature and pH probes that can be interfaced with a computer. If software upgrades are possible we would like to offer computer based labs.*

When completed, please save your file and e-mail (using the File: Send To menu) to tanya_hanton@westvalley.edu