

SUMMARY OF PROGRAM REVIEW

*Western Nevada College
Associate of Science, Chemistry*

I. Description of Program Reviewed

The mission of the Associate of Science in Chemistry degree program is to prepare students for baccalaureate programs in the science, health, teaching, and engineering fields or for the workforce in chemistry-related industries. The program also provides courses that fulfill pre-professional requirements in other programs such as dentistry, medicine, pharmacy, and other health-related professions that require two full years of laboratory chemistry. The program shares the mission of the division, which is to prepare students to succeed in college-level science, math and engineering courses; to prepare students to transfer to four-year colleges; to provide students with the knowledge they need in their careers; and to provide students with opportunities for personal enrichment.

II. Review Process and Criteria

The program review team conducted a self-study over the course of the 2007-2008 academic year in order to identify strengths, weaknesses, and ideas for improvement of the program in terms of: enrollment, curriculum, scheduling, advisement of students, student satisfaction, laboratory facilities, course completion rates, and program retention. The Office of Institutional Research provided the review team with data that were used to inform conclusions about the program.

Two external reviewers—Carolyn Collins, Professor of Chemistry at CSN and Stephanie Arrigotti, Professor of Music and Director of Performing Arts at WNC—reviewed the self-study document, toured the Carson chemistry facilities, met with a group of chemistry students, and reported their findings to the program review team, members of the Program Assessment and Review Committee, the Director of Institutional Research, the Dean of Instruction, and the Vice President of Academic and Student Affairs.

III. Major Findings and Conclusions of the Program Review

An important strength of the program was found to be the three full-time faculty members who generate a large amount of FTE in CHEM 121 (General Chemistry I) on the three main campuses in their service obligation to a large population of pre-nursing and pre-professional students. Another indication of the program's strength is the high success rate (70 percent or better receiving A, B, C or P) in CHEM 121 although the extraordinarily high success rate could indicate a need to compare performance standards to other schools nationally through standardized testing. Finally, through course evaluations, students indicate a high level of satisfaction with their chemistry courses. The focus group that met with the external reviewers also expressed appreciation of the personalized attention and support given by individual faculty and staff.

The following are areas identified as needing improvement. Recommendations for improvement from internal [I] and external [E] reviewers follow each item (*in italics*):

Program Retention: There have been no chemistry graduates since the program's inception in 2002, and a needs assessment has never been conducted. Low enrollment in required and

elective courses (except CHEM 121) resulting in class cancellations makes it difficult to sustain a degree program. The Fallon campus does not always offer a complete sequence of required courses to allow a student to complete an associate of chemistry degree in a timely fashion or without travel to the Carson campus or to another institution.

- *Survey students coming into CHEM 121 on their career goals and course needs, and allow them to make recommendations on course offerings and scheduling on the three main campuses. [I,E]*
- *Conduct a follow-up survey after students complete CHEM 121 in order to learn why they do or do not pursue a chemistry degree. [I]*
- *Establish a goal of graduating students with an Associate of Science in Chemistry by 2011 or consider deactivating the program to make room for a more viable program. [I]*

Curriculum: The core chemistry curriculum is inadequate by national and NSHE standards in that organic chemistry courses with labs are offered as emphasis electives instead of as requirements.

- *Require students to complete at least one semester of organic chemistry (either CHEM 220 or 241/241L and possibly 242/242L) in order to meet state and national standards as well as the program learning outcome related to organic chemistry. [I,E]*

Advisement: There are no formal protocols or procedures to provide students with advisement from the chemistry faculty that could supplement advisement provided by Counseling Services. Students are left to informal conversations with chemistry faculty members.

- *Begin a mentoring and advising program for students committed to a specific chemistry or science field. [I,E]*

Facilities: Though laboratory facilities are generally adequate, they are overcrowded in CHEM 121 classes on all campuses, and students would benefit from the purchase of needed organic chemistry instrumentation. Capabilities across campuses are not consistent.

- *Equip the three main campuses adequately for a core set of experiments in CHEM 121 and 122 and focus on improving organic chemistry instrumentation for one campus only until the program builds substantially. [E]*

IV. Descriptive Statistics

A. Number of students with declared major in the program area:

2007-08*	22
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B. Number of graduates from the program for the following years:

2005-06	0
2006-07	0
2007-08*	0

C. Headcount of students enrolled in any course related to the program (duplicated):

Fall 2007	6
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* Does not include summer 2008.