



Instructional Program Review Summary (IPRS)
Academic Year 2009-10

Chemistry Associate Degree Program

Department: Chemistry

Dean Area: Math and Sciences

Faculty Submitting Report: Dr. Shawn Amorde

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Instructional Program Review Summary (IPRS)

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SELF-STUDY TEAM PARTICIPANTS

List the names of people who participated in the review and their association with your program.

Name Meg Flemming, ACC Faculty, Biology

Name Debbie Sacket, ACC Faculty, Chemistry

Name Madan Mohan, ACC Faculty, Chemistry Chair

Name Steve Kirschner, ACC Faculty, Chemistry

Name Ron Johns, ACC Faculty, Geology

Name Ya Ping Huang, ACC Faculty, Chemistry

Name Elisa Cooper, ACC Faculty, Chemistry

Name Vicki Payne, ACC Faculty, Math

Name Jennifer Wu, Former ACC Student, Concordia Student, and Industry Representative

Name Ron Hall, ACC Student

Name Sophia Pottier, ACC Student

Name Guillermo Enriquez, ACC Student

Name Bobby Shepard, ACC Staff, Chemistry

Name Lou Barnett, ACC Staff and Faculty, Chemistry

PROGRAM DESCRIPTION

Provide a brief description of the overall history and major developments of your program (limit to 500 words).

Chemistry courses were among the first offered by Austin Community College (ACC) when opened in the fall of 1973. By the 1974-75 academic year, ACC listed eleven different chemistry courses in its catalog: Essentials of General and Biological Chemistry (1604), Fundamentals of Chemistry I & II (1614, 1624), General Chemistry I & II (1634, 1644), Organic chemistry I & II (2614, 2624), Quantitative Analysis I & II (2634, 2644), Nuclear Chemistry (2643, and Directed Study (2991/2992/2993). However, the chemistry department and its curriculum were still evolving, and only four courses were offered during the 1976-77 school year General Chemistry I & II and Organic Chemistry I & II). General Organic Chemistry (1643) with a Pharmacology emphasis was added during 1978-79, and was offered for several semesters until it was eliminated from the Austin Community College Nursing curriculum. These five courses formed the core chemistry curriculum for the next several years. Fundamentals of Chemistry I & II (1614, 1624) were cut from the curriculum in 1982, and Introduction to Chemistry (1614) was subsequently added in 1985. In 2006, the Chemistry Department separated laboratory component of the course from the lecture and offered as an independent course. The curriculum has remained fixed since that time, and the Chemistry Department currently offers ten courses: Introduction to Chemistry (1305) and the corresponding lab course (1105), General Chemistry I (1311) & II (1312) and the corresponding lab courses (1111 and 1112), as well as Organic Chemistry I (2323) & II (2325) and the corresponding lab courses (2123 and 2125).

The Chemistry Department has grown dramatically over the past thirty seven years, paralleling the expansion of ACC as a whole. When Austin Community College first began, Chemistry was offered only at the Rio Grande and Ridgeview campuses. Today, chemistry courses are offered at all campuses. The number of students, class sessions, and faculty has similarly expanded. In 1980, there were 643 students registered in 18 lecture sessions and 685 students enrolled in 30 lab sessions. In 2004, during the previous review period, there were 2,662 students enrolled in 76 sections of chemistry courses. As of today, spring 2010, there are approximately 3,550 students enrolled in 116 sections of chemistry courses for this semester alone. The chemistry department has consistently grown in student, faculty, and staff over the history of ACC, but has especially shown tremendous growth in the past five years.

In 2004, the ACC Chemistry Department had 10 full-time and 21 adjunct faculty; while chemistry now has fourteen full-time faculty members, who teach more than half of all classes and nineteen adjunct faculty members as well. The number of full time faculty is growing to 16 by fall of 2010, as we are currently hiring two new faculty members.

Chemistry is a qualitative and quantitative science with an emphasis on laboratory experience. Our laboratory facilities, laboratory equipment, laboratory safety, laboratory inventory, and hazardous waste disposal have improved tremendously over the

years. Chemistry Department has a dedicated safety officer, and all faculty and lab personnel undergo annual safety/hazardous waste training.

The chemistry department has consistently provided a range of excellent courses and grown as a department to meet the community's needs over the past 37 years and will continue to grow and improve as a part of the ACC community for the next many years.

STRENGTHS, WEAKNESSES, OPPORTUNITIES, THREATS (SWOT)

List the names of people who participated in the SWOT and their association with your program.

Name Debbie Sackett, ACC Faculty, Chemistry

Name Madan Mohan, ACC Faculty, Chemistry Chair

Name Steve Kirschner, ACC Faculty, Chemistry

Name Ya Ping Huang, ACC Faculty, Chemistry

Name Elisa Cooper, ACC Faculty, Chemistry

Name Jennifer Wu, Former ACC Student, Concordia Student, and Industry Representative

Name Ron Hall, ACC Student

Name Sophia Pottier, ACC Student

Name Guillermo Enriquez, ACC Student

Name Bobby Shepherd, ACC Staff, Chemistry

Name Lew Barnett, ACC Staff and Faculty, Chemistry

Summarize the findings of the SWOT analysis. Focus on the top 5 or 6 issues and answer the questions below.

Strengths: In what does your program excel?

- The Chemistry department provides many opportunities for students with a diverse background; i.e. providing small, hands on, classes with a wide variety of class times offered in a lot of locations
- The chemistry department has highly qualified staff of 14 full time and 19 adjunct faculty, with close to 70% of courses taught by full time faculty. 86% of the full time faculty hold the highest degree possible in their field and most have industrial experience as well as teaching experience. The chemistry department has shown incredible growth in the past five years including hiring 6 new full time faculty in the past five years.
- Chemistry classes are making and growing, including a completely full course schedule for both fall and spring semesters in the past year. We've grown to currently enroll approximately 3500 students this semester.
- Chemistry facilities are adequate, well equipped, with lab courses taught by faculty and not teaching assistants.
- Chemistry courses have had very high student success rates and no issues with transferring courses to local 4-year programs.

Weaknesses: What are the aspects of the program that, if not addressed, will negatively affect the program's future?

- The Chemistry department as a whole needs to promote more community outreach programs
- The lecture courses need to increase the use of computer technology into classrooms and labs, including immediate creation of instructor websites, use of blackboard, and program use, i.e. graphing and/or drawing programs.
- Need to update and renovate labs to fit ANSI ratings, specifically ventilation to meet building codes
- Need to stop sharing laboratory classrooms with biology, which are not adequate lab spaces for safely conducting chemical experiments

-Need to replace many existing laboratory experiments with green experiments to reduce hazardous waste and replace many of the hazardous chemicals used in labs

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-With the consistent growth chemistry has experienced, we now have night and weekend courses, without lab staff to cover those courses. We need to hire more lab techs to help cover all sections of laboratory sections.

Opportunities: What factors does your program need to take advantage of to enhance the quality of this program?

-Improve the ratio of full time faculty to adjuncts teaching lab courses

-Add more technology into the curriculum for labs and lecture, i.e. more online assignments, graphing assignments, web searches etc.

-More classroom accessible props, i.e. chemistry programs on laptop computers and technology in the classroom to facilitate demonstrations, analyzing data, and chemistry drawing programs during the lecture

-Chemistry needs to create and offer distance learning courses

-Community Outreach programs, including connecting chemistry students with the community through an outreach program and/or bringing the community to chemistry for outreach workshops or classes.

Threats: What are the external factors that could negatively impact your program's future?

-We need to go green as much as possible in the laboratory courses

-Chemistry offers small, hands on classes for a fraction of the cost of other local universities and should advertise and promote the department to local students

- Online universities are a direct competition for ACC and currently chemistry does not offer distance or online courses and needs to offer more nights and weekend classes
- Currently the peer review process for faculty development is not adequate
- Chemistry needs an active mentor program for new faculty
- Faculty need to get more involved in development

Discuss changes from the program's previous SWOT analysis.

Summary of Previous Report by Matiur Rahman in 2004

Recommendation; Purchase new lab equipment

Progress; Chemistry is continually purchasing chemicals, glassware, and updating instruments

Recommendation; Develop a course specific for students in allied health science programs

Progress; The general and organic chemistry courses fit the pre-requirements to many health care professions

Recommendation; Build lab and lecture facilities on the South Austin Campus

Progress; Completed

Recommendation; Expand program to offer more courses at the PIN and CYP

Progress; In the past five years the program has grown significantly on both campuses, including the addition of organic courses at the CYP campus.

Recommendation; Hire more full time faculty and lab assistants

Progress; Chemistry has hired six new full time faculty and three new lab techs in the past five years.

Recommendation; Improve student completion rates

Progress; Overall success rates have risen from 59.9% to 64.9% and as high as 70.9% in the organic chemistry courses

Recommendation; Improve communication among faculty, staff, and among campuses

Progress; We are continuing to improve through departmental meetings, emails, and the departmental website.

Recommendation; Add a Distance Learning course

Progress; We still need to establish an online or distance course

Recommendation; Improve lab safety

Progress; We are continually improving lab safety

Recommendation; Improve budget efficiency

Progress; We are on target for all budgets

ANALYSIS

[a] Relevance of the program to College mission and desired ends

Mission:

Review the program's purpose statement. Verify that the statement is current and accurate and reflects the mission of the college as a whole, or update the purpose statement.

The Self-Study team reviewed the program purpose statement and found (select one):

The purpose statement as written in the assessment database ([U-LEAD](#)) is current, accurate, and reflects the mission of the college. Enter the program's purpose statement:

The purposes of the Chemistry Department are: (1) to provide chemistry majors with a practical and theoretical basis that will prepare them for transfer and success in a baccalaureate degree granting institution and (2) to provide general education that assists students to think critically and to apply the basic knowledge, skills, and principles of chemistry to everyday life and their chosen careers.

The purpose statement was revised in the assessment database ([U-LEAD](#)) as shown below (enter the revised purpose statement):

Intended Outcomes (Board Policy A-2 Intended Outcomes)

What are you doing to support the intended outcomes of the college to “ensure a quality return on the public’s investment in its community college district?” In what ways are you unable to meet these outcomes?

The Chemistry Department maintains the highest quality instruction that is both inspiring and challenging to students and fully prepares them to succeed in college and the workforce all at a fraction of the price of other local universities. All chemistry classes address the core expectations for student learning outcomes with regards to critical thinking. This skill serves students well whether they desire to complete the core curriculum for transfer to a four-year institution, plan to complete an Associate’s degree at ACC, or need specific job training and skills to enhance their employment opportunities.

The chemistry department provides a small class size with hands on instruction in both the laboratory and lecture settings, which provide theoretical and practical chemistry skills in which students will take with them in their next program. The chemistry courses also promote the use of computer-based technology, solving problems and acquiring information. Students are able to develop the skills necessary to gather, synthesize, analyze, and evaluate key information. Laboratory courses now use state of the art instrumentation that prepares students for more advanced laboratory courses as well as for the workforce.

[b] In what ways does your program assess and respond to community needs?

The bulk of the student population we serve is aiming toward careers in the health care industry, which has a direct and lasting effect on the needs of our community.

The Chair of the Chemistry Department meets with business and community leaders specifically to gain input on ways the College and various departments can better meet community needs.

[c] Accessibility to students and identification of unnecessary barriers

Examine data (below) that relate to when and where courses required for a degree in the program are offered. Evaluate students' access to the program.

A major strength of ACC's chemistry program is accessible and affordable educational resources for the entire community, regardless of academic ability. This is accomplished through small class size and individual attention to students, as well as additional tutoring sessions and varied instructional methods incorporating multiple levels of learning avenues. This is achieved without compromising high academic standards. Chemistry majors from ACC are among the most successful transferring enrollees to universities within the Austin area as a result of the student-focused program. The faculty members make chemistry relevant to their students' lives by applying principles of learning, cognition, behavioral management, adjustment, coping, and life span development.

The Chemistry Department does an excellent job of guaranteeing access to its chemistry classes for all students. We offer classes at all ACC campuses and locations. Every effort is made to meet any measurable demand for classes at a particular time and place. The Chemistry Department offers daytime, evening and weekend classes (as part of Weekend College). We are very committed to the success of our students and are eager to expand classes into areas where students have lacked access in the past. Deficiencies in reading, writing, critical thinking, and study skills appear to be on the rise among all segments of our class population and suggest the need for a more concerted college and community-wide effort to address this growing problem. The Chemistry Department is committed to improving students' readiness and working with the college to guarantee advice and counseling that will support students' future success in college and the workforce.

RELATED DATA:

Course Offerings by Location, Semester, Time of Day, and Mode of Delivery

			Fall 2006		Spring 2007		Summer 2007		Fall 2007		Spring 2008		Summer 2008		Fall 2008		Spring 2009		Summer 2009	
			Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
CHEM-1105	CYP	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.4%	1	0.5%	1	0.7%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.4%	1	0.5%	2	1.5%
		Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	1	0.5%	1	0.7%
	EVC	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	1	0.5%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	NRG	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.0%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.1%	4	2.0%	1	0.7%
	PIN	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.1%	3	1.5%	0	0.0%
		Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	0	0.0%	1	0.7%
	RGC	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.5%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.5%	0	0.0%
	RVS	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.1%	2	1.0%	1	0.7%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.0%	1	0.7%
		Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	1	0.5%	0	0.0%
	SAC	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	1	0.5%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	2	1.0%	1	0.7%
		Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%
	CHEM-1111	CYP	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.1%	4	2.0%	1	0.7%
Afternoon			0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	1	0.5%	2	1.5%
Evening			0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	2	1.0%	1	0.7%
NRG		Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	6	4.3%	7	3.4%	1	0.7%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	2.8%	3	1.5%	4	3.0%
		Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.4%	2	1.0%	2	1.5%
PIN		Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.4%	3	1.5%	1	0.7%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	0	0.0%	0	0.0%
RGC		Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.1%	4	2.0%	3	2.2%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	6	4.3%	4	2.0%	4	3.0%
		Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.4%	2	1.0%	1	0.7%
RVS		Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	5	3.5%	4	2.0%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	3	1.5%	3	2.2%
		Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.5%	0	0.0%
SAC		Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.4%	3	1.5%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.5%
		Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.4%	1	0.5%	0	0.0%

CHEM-1405	CYP	Morning	0	0.0%	0	0.0%	1	2.1%	0	0.0%	0	0.0%	2	3.8%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	2	2.1%	2	2.2%	0	0.0%	2	2.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
		Evening	2	2.1%	1	1.1%	0	0.0%	2	2.0%	2	1.9%	1	1.9%	0	0.0%	0	0.0%	0	0.0%	
	EVC	Morning	2	2.1%	0	0.0%	0	0.0%	2	2.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	0	0.0%	1	1.1%	0	0.0%	0	0.0%	2	1.9%	1	1.9%	0	0.0%	0	0.0%	0	0.0%	
	NRG	Morning	0	0.0%	2	2.2%	0	0.0%	0	0.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	4	4.1%	3	3.2%	0	0.0%	4	4.0%	4	3.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
	PIN	Morning	0	0.0%	0	0.0%	2	4.2%	0	0.0%	0	0.0%	2	3.8%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	3	3.1%	3	3.2%	1	2.1%	3	3.0%	3	2.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
	RGC	Morning	2	2.1%	2	2.2%	1	2.1%	2	2.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
	RVS	Morning	2	2.1%	2	2.2%	2	4.2%	2	2.0%	2	1.9%	2	3.8%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	2	2.1%	2	2.2%	0	0.0%	2	2.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
		Evening	2	2.1%	1	1.1%	0	0.0%	2	2.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
	SAC	Morning	2	2.1%	2	2.2%	1	2.1%	2	2.0%	2	1.9%	1	1.9%	0	0.0%	0	0.0%	0	0.0%	
		Evening	0	0.0%	0	0.0%	1	2.1%	0	0.0%	0	0.0%	1	1.9%	0	0.0%	0	0.0%	0	0.0%	
	CHEM-1411	CYP	Morning	0	0.0%	2	2.2%	0	0.0%	4	4.0%	4	3.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
			Afternoon	2	2.1%	0	0.0%	1	2.1%	2	2.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Evening			2	2.1%	2	2.2%	0	0.0%	2	2.0%	2	1.9%	2	3.8%	0	0.0%	0	0.0%	0	0.0%	
NRG		Morning	5	5.2%	7	7.5%	2	4.2%	5	5.1%	7	6.7%	3	5.7%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	7	7.2%	3	3.2%	4	8.3%	7	7.1%	3	2.9%	4	7.5%	0	0.0%	0	0.0%	0	0.0%	
		Evening	2	2.1%	2	2.2%	1	2.1%	2	2.0%	2	1.9%	1	1.9%	0	0.0%	0	0.0%	0	0.0%	
PIN		Morning	2	2.1%	3	3.2%	1	2.1%	2	2.0%	3	2.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	1	1.0%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
RGC		Morning	6	6.2%	4	4.3%	4	8.3%	6	6.1%	4	3.8%	4	7.5%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	6	6.2%	4	4.3%	1	2.1%	6	6.1%	4	3.8%	2	3.8%	0	0.0%	0	0.0%	0	0.0%	
		Evening	2	2.1%	2	2.2%	2	4.2%	2	2.0%	2	1.9%	2	3.8%	0	0.0%	0	0.0%	0	0.0%	
RVS		Morning	6	6.2%	4	4.3%	0	0.0%	6	6.1%	4	3.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	2	2.1%	4	4.3%	3	6.3%	2	2.0%	4	3.8%	2	3.8%	0	0.0%	0	0.0%	0	0.0%	
		Evening	1	1.0%	2	2.2%	0	0.0%	1	1.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
SAC		Morning	2	2.1%	2	2.2%	1	2.1%	2	2.0%	2	1.9%	1	1.9%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	3	3.1%	2	2.2%	0	0.0%	3	3.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
		Evening	0	0.0%	1	1.1%	0	0.0%	0	0.0%	1	1.0%	1	1.9%	0	0.0%	0	0.0%	0	0.0%	
CHEM-1412		CYP	Morning	2	2.1%	2	2.2%	1	2.1%	2	2.0%	2	1.9%	2	3.8%	0	0.0%	0	0.0%	0	0.0%
	Evening		0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
	NRG	Morning	2	2.1%	0	0.0%	0	0.0%	2	2.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	0	0.0%	2	2.2%	2	4.2%	0	0.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
	PIN	Morning	2	2.1%	2	2.2%	0	0.0%	2	2.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
	RGC	Morning	1	1.0%	0	0.0%	1	2.1%	0	0.0%	1	1.0%	1	1.9%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	2	2.1%	2	2.2%	2	4.2%	2	2.0%	2	1.9%	2	3.8%	0	0.0%	0	0.0%	0	0.0%	
		Evening	0	0.0%	4	4.3%	1	2.1%	0	0.0%	4	3.8%	1	1.9%	0	0.0%	0	0.0%	0	0.0%	
	RVS	Morning	2	2.1%	2	2.2%	1	2.1%	2	2.0%	2	1.9%	2	3.8%	0	0.0%	0	0.0%	0	0.0%	
		Afternoon	1	1.0%	0	0.0%	1	2.1%	1	1.0%	0	0.0%	1	1.9%	0	0.0%	0	0.0%	0	0.0%	
	SAC	Morning	0	0.0%	2	2.2%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
Afternoon		0	0.0%	0	0.0%	1	2.1%	0	0.0%	2	1.9%	1	1.9%	0	0.0%	0	0.0%	0	0.0%		
CHEM-2123	CYP	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.5%	0	0.0%	
	NRG	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.4%	2	1.0%	2	1.5%	
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.4%	0	0.0%	0	0.0%	
	RGC	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	0	0.0%	1	0.7%	
		Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.0%	2	1.0%	1	0.7%	
	RVS	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.0%	0	0.0%	0	0.0%	
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.4%	0	0.0%	0	0.0%	0	0.0%	

CHEM-2125	CYP	Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%		
	NRG	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	0	0.0%	0	0.0%		
	RGC	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.0%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%
		Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.4%	0	0.0%	1	0.7%	0	0.0%
RVS	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	
	Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.0%	0	0.0%	0	0.0%	0	0.0%	
CHEM-2323	CYP	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.5%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.5%
	NRG	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	2	1.0%	0	0.0%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.2%	0	0.0%
	RGC	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	0	0.0%	0	0.0%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	0	0.0%	3	2.2%	0	0.0%
		Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	1.5%	0	0.0%	0	0.0%	0	0.0%
	RVS	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.0%	0	0.0%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	0	0.0%	0	0.0%	0	0.0%
CHEM-2325	CYP	Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.5%	0	0.0%
	NRG	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	RGC	Morning	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.0%	0	0.0%	0	0.0%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	3	2.2%	0	0.0%
		Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
RVS	Afternoon	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	1.0%	2	1.5%	0	0.0%	0	0.0%	
CHEM-2423	NRG	Morning	2	2.1%	2	2.2%	0	0.0%	0	0.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	2	4.2%	0	0.0%	0	0.0%	2	3.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	RGC	Morning	2	2.1%	0	0.0%	0	0.0%	2	2.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		Afternoon	2	2.1%	0	0.0%	2	4.2%	2	2.0%	0	0.0%	2	3.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		Evening	0	0.0%	2	2.2%	0	0.0%	0	0.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	RVS	Morning	0	0.0%	2	2.2%	0	0.0%	0	0.0%	2	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		Afternoon	2	2.1%	0	0.0%	0	0.0%	2	2.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Evening	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
	CHEM-2425	NRG	Morning	1	1.0%	0	0.0%	0	0.0%	1	1.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
RGC		Morning	0	0.0%	2	2.2%	0	0.0%	0	0.0%	1	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		Afternoon	0	0.0%	0	0.0%	2	4.2%	0	0.0%	0	0.0%	2	3.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		Evening	0	0.0%	0	0.0%	0	0.0%	2	2.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
RVS	Afternoon	2	2.1%	2	2.2%	1	2.1%	0	0.0%	2	1.9%	1	1.9%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
Total			97	100.0%	93	100.0%	48	100.0%	99	100.0%	104	100.0%	53	100.0%	141	100.0%	203	100.0%	135	100.0%		

Student Diversity

Chemistry		Fall 2006	Spring 2007	Summer 2007	Fall 2007	Spring 2008	Summer 2008	Fall 2008	Spring 2009	Summer 2009
Age (Avg.)		24.0	24.1	23.5	23.7	23.8	23.5	24.0	24.0	23.9
Ethnicity	White	58.5%	57.9%	57.4%	56.5%	55.6%	56.2%	57.3%	55.3%	55.9%
	Black	5.6%	6.1%	5.3%	5.9%	5.4%	6.6%	7.0%	6.3%	6.6%
	Hispanic	20.2%	20.0%	21.7%	22.0%	20.9%	20.9%	21.1%	22.6%	20.5%
	Asian	9.3%	9.1%	10.8%	10.3%	12.0%	12.1%	10.3%	11.6%	13.8%
	Am. Indian/Alaskan-Native	1.2%	0.9%	0.5%	0.9%	0.8%	0.4%	0.5%	0.6%	1.0%
	Non-Resident	3.9%	3.8%	2.9%	3.1%	3.8%	1.7%	1.8%	1.9%	1.2%
	Other	1.4%	2.2%	1.4%	1.4%	1.5%	2.1%	2.1%	1.7%	1.0%
Gender	Female	55.0%	55.1%	59.8%	54.1%	52.5%	60.4%	55.2%	53.5%	60.3%
	Male	45.0%	44.9%	40.2%	45.9%	47.5%	39.6%	44.8%	46.5%	39.7%
Total		1,562	1,522	732	1,588	1,544	808	1,363	1,546	919

Faculty Diversity

Chemistry		Fall 2006	Spring 2007	Summer 2007	Fall 2007	Spring 2008	Summer 2008	Fall 2008	Spring 2009	Summer 2009
Ethnicity	White	44.4%	40.7%	42.3%	46.7%	48.5%	48.3%	52.9%	52.9%	51.6%
	Black	18.5%	18.5%	19.2%	16.7%	15.2%	17.2%	14.7%	14.7%	16.1%
	Hispanic	7.4%	7.4%	3.8%	6.7%	6.1%	3.4%	5.9%	5.9%	3.2%
	Asian	29.6%	33.3%	30.8%	26.7%	27.3%	27.6%	23.5%	23.5%	25.8%
	Am. Indian/Alaskan-Native	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Non-Resident	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Other	0.0%	0.0%	3.8%	3.3%	3.0%	3.4%	2.9%	2.9%	3.2%
Total		27	27	26	30	33	29	34	34	31

Identify any unnecessary barriers to students, especially those who are educationally disadvantaged and not well served by other colleges.

None were identified.

[d] Student outcomes

Examine data below that relate to awards, course completions, and withdrawals. Evaluate student outcomes for the program.

ACC students have traditionally taken chemistry courses to fulfill degree requirements for other disciplines, and the number of students pursuing Associate Degrees in Chemistry has remained low. Most chemistry students are pursuing a degree in the physical sciences, or fulfilling requirements to apply to healthcare professional degrees, all of which require transfer to a four year institution and a bachelor's degree. We will continue to build our closer ties between the department and student communities, working with students to build awareness and interest. For example, the chemistry website now includes more information on what students can do with a chemistry degree.

The data on completion rates is of much greater concern and is the main focus of our attention. The numbers reflect completion rates defined as grades of A, B, C, or D, but this is more accurately defined in terms of success rates by omitting D grades. This of course lowers the course mastery rate, but the numbers still remain between 65% and 75% for chemistry in the spring and fall semesters. The most significant difference occurs in summer classes when completion rates are 10% to 20% higher. Withdrawal rates follow the same pattern and illustrate the same phenomena. Based on the differences in these student populations, it seems clear that

the problems are the deficiencies in basic skills, motivation and self-regulation already identified. These problems will have to be the focus of any attempt to improve completion and / or success rates.

RELATED DATA:

Awards

Program	Award	2004-05	2005-06	2006-07	2007-08	2008-09	05-09 % chg
Chemistry	AS	2	3	4	2	3	50.00%

Course Completion Rates

		Fall 2006	Spring 2007	Summer 2007	Fall 2007	Spring 2008	Summer 2008	Fall 2008	Spring 2009	Summer 2009
CHEM	CHEM-1105	.	.	.	.	.	.	67.4%	68.0%	81.0%
	CHEM-1111	.	.	.	.	.	.	67.8%	64.7%	78.0%
	CHEM-1112	.	.	.	.	.	.	60.7%	59.4%	72.6%
	CHEM-1305	.	.	.	.	.	.	62.6%	62.2%	69.3%
	CHEM-1311	.	.	.	.	.	.	63.7%	61.4%	74.6%
	CHEM-1312	.	.	.	.	.	.	56.0%	58.1%	69.6%
	CHEM-1405	57.9%	54.3%	70.7%	53.4%	61.4%	78.8%	.	.	.
	CHEM-1411	55.1%	57.3%	68.4%	59.2%	54.5%	69.8%	.	.	.
	CHEM-1412	68.3%	62.9%	73.9%	66.4%	61.0%	80.8%	.	.	.
	CHEM-2123	.	.	.	.	.	.	76.1%	64.8%	78.1%
	CHEM-2125	.	.	.	.	.	.	68.4%	78.5%	72.0%
	CHEM-2323	.	.	.	.	.	.	70.9%	64.4%	78.7%
	CHEM-2325	.	.	.	.	.	.	65.8%	75.0%	79.7%
	CHEM-2423	79.3%	70.8%	73.8%	71.6%	70.9%	75.8%	.	.	.
	CHEM-2425	61.2%	77.5%	64.4%	75.7%	86.3%	80.9%	.	.	.
Total	59.6%	59.5%	70.5%	59.9%	59.7%	75.6%	64.9%	63.3%	74.9%	

Note: Completion rates = Grades of A,B,C / Grades of A, B, C, D, F, W

Withdrawal Rates

		Fall 2006	Spring 2007	Summer 2007	Fall 2007	Spring 2008	Summer 2008	Fall 2008	Spring 2009	Summer 2009
CHEM	CHEM-1105	.	.	.	.	.	.	20.3%	21.1%	13.2%
	CHEM-1111	.	.	.	.	.	.	23.2%	26.0%	18.4%
	CHEM-1112	.	.	.	.	.	.	33.3%	35.0%	20.1%
	CHEM-1305	.	.	.	.	.	.	20.5%	21.2%	13.2%
	CHEM-1311	.	.	.	.	.	.	24.0%	25.9%	18.3%
	CHEM-1312	.	.	.	.	.	.	34.3%	34.7%	19.8%
	CHEM-1405	31.9%	31.7%	20.4%	27.7%	26.1%	13.7%	.	.	.
	CHEM-1411	34.4%	31.5%	20.7%	25.9%	30.7%	20.3%	.	.	.
	CHEM-1412	27.3%	24.5%	17.7%	22.6%	32.7%	12.4%	.	.	.
	CHEM-2123	.	.	.	.	.	.	19.1%	24.7%	15.1%
	CHEM-2125	.	.	.	.	.	.	26.3%	13.6%	18.0%
	CHEM-2323	.	.	.	.	.	.	18.9%	24.2%	14.7%
	CHEM-2325	.	.	.	.	.	.	26.3%	13.6%	15.3%
	CHEM-2423	14.0%	19.1%	16.4%	16.8%	24.0%	12.7%	.	.	.
	CHEM-2425	24.5%	11.3%	31.1%	16.2%	9.8%	17.0%	.	.	.
Total	31.0%	28.5%	20.1%	25.1%	28.9%	16.2%	24.5%	26.1%	17.3%	

Note: Withdrawal rates = Grades of W / Grades of A, B, C, D, F, W

[e] Measures of program quality and educational value added

- Academic Standards

What are the processes and procedures that the department uses to maintain academic standards and achieve consistency within the department?

The Chemistry Department has compiled a Chemistry Faculty Handbook that is revised and updated periodically and distributed to all faculty members in hard copy form and made available on the Chemistry Department website at www.austincc.edu/chem. The handbook includes the Department's statement of purpose, descriptions of courses, the duties and responsibilities, as well as the professional expectations of all faculty members, syllabus requirements, recommended policy wording for syllabi, core curriculum and departmental expectations, including detailed learning outcomes and objectives, a list of approved textbooks, and information on student assessment and the faculty evaluation process, including rubrics for meeting the different levels of assessment (excellent, very good, good, needs improvement, unacceptable).

The Chemistry Department conducts an intensive annual review of its faculty members based on the college guidelines for faculty evaluation. All new faculty members must submit a portfolio each year for their first three years. After that, each year one-third of the faculty must submit a three-year portfolio demonstrating what they have been doing in their classes, changes they have made, and reasons for what they are doing based on their overall goals and objectives.

First year faculty members must submit their syllabi and copies of exams, study aids, handouts, power point slides, assignments, and papers, as well as a list of videos, or other supplemental means of delivering content. During their second year of teaching, faculty members must resubmit their first year portfolio materials and add anything new or changed, clearly indicating what has changed and why. In addition, they must submit a Statement of Teaching Philosophy that provides insight into how and why they teach the way they do. The third year portfolios add the changes from that year and a Course Commentary and Faculty Development Plan. This must be repeated every third year after that.

The second half of the evaluation process is the Faculty Input Form. All chemistry faculty members must be evaluated by the students in every class they teach each fall. Once the student evaluation forms are processed and the results have been disseminated among the faculty, they must respond by filling out the Faculty Input Form. Faculty members are instructed to thoroughly and

thoughtfully respond to the statistical analysis and the student comments. In addition, they must set specific goals for instructional gains based on the evaluations.

- **Curriculum**

What procedures are used to assure that the curriculum is current and adequately meets the needs of students?

The courses currently offered in Chemistry are:

- (1) Introduction to Chemistry (1305 and 1105)
- (2) General Chemistry I & II (1311, 1111, 1312, and 1112)
- (3) Organic Chemistry I & II (2323, 2123, 2325 and 2125)

The curriculum includes not only the broad elements of a basic education in chemistry but also the cognitive and behavioral skills needed by critical and creative thinkers, and problem solvers. Our curriculum includes a variety of interesting topics that are relevant to everyday life. The quality of our courses contributes to the high rate of their transferability for students.

The Chemistry Department reviews its learning outcomes and objectives each year and revises them as necessary. The textbook list is also revised each year and a variety of faculty development opportunities are offered by the college and the department. The chemistry faculty members are encouraged to take advantage of the partial funding for travel to outside conferences that is made available in the Dean's budget.

The Chemistry Department devotes a significant amount of time to evaluating the materials provided by faculty in their portfolio. Rigorous guidelines were developed to aid in determining if course content and exams are designed to achieve the learning outcomes and learning objectives established by the Department and published in the Chemistry Faculty Handbook available online at www.austincc.edu/chem.

Are learning outcomes defined for courses and the program? X Yes No

Are course texts up-to-date? X Yes No

Provide the date of the last review? Currently

Are course and program [listings](#) in the ACC Catalog up-to-date? X Yes No

Are published [degree plans](#) up-to-date? Yes

Do all courses have up-to-date course syllabi on file? X Yes No

Are syllabi published on-line? Some

Provide the URL for the syllabi: Syllabi are provided on individual faculty websites, i.e. www.austincc.edu/samorde

Evaluate the use of instructional resources, technology and equipment necessary for teaching (including those in the library).

The Chemistry Department offers a wide range of instructional methods in order to meet the individual and diverse learning styles of our students. The instructional methods within a course can include, but are not limited to DVDs, CD-ROM, conventional videos, interactive web exercises and tutorials, and online practice tests. Various evaluation or assessment techniques are also used within our courses, including research papers, multiple choice tests, essays, and Internet and computer application projects. These instructional methods and resources provide an expanded arena in which our students can learn, communicate, and grow.

To what extent are you able to offer distance learning courses?

Chemistry is not currently offering distance learning courses, but we need to develop a distance learning course as soon as possible.

• **Faculty**

Do all faculty teaching in the program meet [SACS requirements](#)?

X Yes No (if no, please explain)

Evaluate your program's faculty, stipulating the qualities, discipline-specific professional development activities, and experience that the program requires.

Of course, the backbone of the chemistry program is the faculty. The Chemistry Program is comprised of a dynamic, multi-talented faculty. The diversity in areas of expertise is broad, and a high level of academic training is typically reflected. The faculty members' areas of specialty within the discipline vary and provide good overall representation of the field. The intellectual sophistication and commitment to excellence of our faculty is manifested by their intrinsic motivation to remain current in the discipline, add to the field of knowledge by conducting research, and exploring new areas of study within the discipline. In addition, most of our faculty have over 10 years of teaching experience, and are diversified in their areas of expertise with some having an extensive teaching experience. In general, our faculty members exhibit a strong dedication to a high level of professional competence and development.

Our faculty members are committed to our students and to lifelong learning. They use their talents and their energy to engage our students actively in the learning process. Their teaching promotes critical thinking, individual self-actualization, intellectual growth, creativity, and freedom of discussion. They actively help students become better learners, provide students with insight into the nature of intelligence and stimulate lifelong learning.

The level of ideological and cultural diversity among our faculty is high. There seems to be a wide range of attitudes, ideas, and creative cognitive styles. This is appropriate for our large dynamic discipline, and facilitated by the strong leadership within the program. In addition, our faculty is committed to protecting the expression of diverse viewpoints that bear on the curricula, our services to the students, and the role of the Chemistry Program within the institution.

Out of fourteen full-time and nineteen adjuncts, all evaluations from the previous academic year were very good or excellent except for three. Student course evaluations are very useful in assisting the Chemistry Department in its continual efforts at improvement. The statistical data allows us to compare our program to the college average for evaluations, which demonstrates that the Chemistry Department's average scores, which range from 5.4 – 5.7, are just above those of the college as a whole. The student comments often refer to the "enthusiasm" of our instructors or remark on their perception that the instructors are "involved with the students" and "care about the students." Many students also make reference to the "high level of knowledge" exhibited by the instructors and their competence in the field of teaching. Another comment that is expressed quite often is the appreciation of how well the instructors "relate coursework to real life" and are able to link theory and practice in a way that students can understand.

Are student evaluations of instruction within acceptable range? (Consult with department chair for data.)

X Yes No

What are you doing to promote innovative modes of instruction?

-Faculty are all encouraged to increase the use of technology in the classroom, we discuss ideas regularly in departmental meetings and are granted the resources we request.

- **Student Satisfaction**

What do student course evaluations reveal about your program?

See above

[f] Adequacy of program resources and efficiency of resource use

Describe the overall adequacy of resources (human, technological and capital, facilities, and fiscal) available to the program for providing effective program delivery and outcomes.

The Chemistry Department is currently benefiting from the hiring of three full-time faculty members in the last two years and two more in this year. Prior to this, the situation was quite difficult and it appeared that we were not making the progress that we needed to make in this regard. Today we are more optimistic that with the continued support of the College, we will meet our future goals in terms of a more constructive ratio of full-time to adjunct faculty members. As more and more students enter into Chemistry Program, the need for up-to-date technology, basic equipment, and resources increases. These include, but are not limited to, renovation of our existing labs, updating and improving the level of instrumentation and the hiring of more highly qualified lab technicians. Of utmost concern is the improvement of our existing labs and the hiring of qualified lab technicians.

RELATED DATA

Ratio of full-time to adjunct faculty, Percent of sections taught by full-time faculty, Percent of contact hours taught by full-time faculty

Chemistry	Full-Time	Combined Sections	128	103	66	77	84
		Enrollments	2,229	2,268	1,985	2,264	2,455
		Avg. Section Size	17.4	22.0	30.1	29.4	29.2
		Credit Hrs.	8,916	9,072	7,940	9,056	9,820
		Contact Hrs.	213,964	217,728	190,560	217,344	235,680
	Adjunct	Combined Sections	59	59	47	44	45
		Enrollments	938	1,283	1,280	1,128	1,165
		Avg. Section Size	15.9	21.7	27.2	25.6	25.9
		Credit Hrs.	3,752	5,132	5,120	4,512	4,660
		Contact Hrs.	90,048	123,168	122,880	108,288	111,840
	Other	Combined Sections	16	.	16	17	15
		Enrollments	267	.	429	469	370
		Avg. Section Size	16.7	.	26.8	27.6	24.7
		Credit Hrs.	1,068	.	1,716	1,876	1,480
		Contact Hrs.	25,632	.	41,184	45,024	35,520

[g] Comparison of program performance, price, and enrollment with that of alternate local suppliers

How is the program competitive with similar programs offered by other institutions or schools in the service area in terms of performance, cost to students, and enrollments?

The chemistry program operates on a conservative budget; however our students are given access to high quality instruction and use high quality instrumentation at a bargain price. There are no additional costs to students outside of regular ACC tuition and fees, with the exception of the \$3.50 insurance fee accessed students. Every effort is made to minimize costs to students in terms of textbook selection and required reading. The Chemistry Program continues to grow with increased enrollment, added sections for all chemistry classes offered.

[h] Direct and indirect program-related revenues and costs to the College

Identify the major sources of revenue for the program, including grants, partnerships, etc.

The major sources of revenue for the Chemistry Program are those collected through student tuition and the taxes levied at the district, state and federal level that are contributed to the general revenue for the College.

Compare program costs to those of other ACC programs.

The Chemistry Program is very cost effective in comparison to other programs that require much more in terms of equipment and supplies. When comparisons are made with similar programs, such as the Physics and Biology, the costs are about the same. For example in 2006, the total cost per SCH for Chemistry, Biology, and Physics are listed below;

Chemistry	\$262.39
Biology	\$264.44
Physics	\$254.87

The costs are very similar between the physical science departments.

Compare the program's actual expenditures to the approved program budget for the previous two years.

The Chemistry Department has remained within its approved program budget for the previous two years.

WORKFORCE AREA-SPECIFIC INFORMATION

Only Workforce Programs complete the items below.

Report/status from latest external accrediting agency visit



Date and summary of the most recent program revision



Number of graduates within the last three years



Program-collected data indicating satisfaction level of currently enrolled degree-seeking individuals

Program-collected data indicating satisfaction level of non-degree-seeking students who took program major courses within one year of course completion

Summary of results of most recent focus group discussion, advisory committee discussion, and external employer surveys

Evidence of SCANS competency integration into course syllabi and programs



Summary of the program's last advisory committee meeting in which industry, employment, curriculum issues were discussed, including committee recommendations on entry-level skills.

CONCLUSIONS

Based on the information collected and analyzed during the program review process, what are the major conclusions of this review of the program?

The Chemistry Program strives for excellence in the quality of its courses, the delivery of instruction, and the overall management of the program. The chemistry department offers a wide range of courses from a highly qualified faculty using different modes of instruction in order to meet the individual educational needs of our students who are of different ages and have different life responsibilities and schedules. The chemistry program has improved student completion rates, hired more faculty and staff, added more sections both lecture and lab courses, improved lab safety, improved and updated lab equipment and has consistently continued to grow and improve as a department. However, to continue to grow, the chemistry department needs improving with respect to offering distance learning courses, faculty development and peer review, updated lab facilities, hiring more lab tech staff, updating lab experiments to include green experiments and continuing to incorporate new technology into the curriculum.

PROGRAM VISION STATEMENT

State the program's vision or preferred future for the next five years. The vision statement should provide direction to the program as it makes improvements to enhance its effectiveness and efficiency.

The chemistry department continues to envision considerable growth and expansion of the chemistry program for the next five years. In order to facilitate that growth, chemistry plans to address our weaknesses and threats while taking advantage of our opportunities and improving our strengths.

The department plans to increase the use of computer technology into classrooms and labs, including immediate creation of instructor websites, updating and maintaining the departmental website, use of blackboard, and offering faculty and staff development workshops to facilitate these goals and learn new technologies as they become available.

Chemistry needs to expand the course selection to include distance learning courses. The chemistry department plans to work toward offering a distance learning general chemistry course to increase access to a larger number of students.

The department needs to renovate the labs to meet ANSI standards and improve ventilation to meet building codes. Chemistry needs to replace many of the existing lab procedures used in labs with new green alternative lab procedures. Continuing to share lab space with the biology department will impede many of these goals, so the department expects to move toward not sharing lab classrooms with other departments. Chemistry envisions hiring more lab personnel in order safely cover the rapid expansion of chemistry courses.

The chemistry department envisions getting more involved with the community we serve, this includes promoting more community outreach programs, attending local workshops and seminars in the field of chemistry, and facilitating relationships with the other local universities and colleges.

The chemistry faculty plan to increase the amount of peer review, professional development, and implement an active mentor program for new faculty.

EXECUTIVE SUMMARY

Use the following guidelines to provide a concise overview of the program review contained in this report.

Write a brief description of the goals and objectives of the program.

Our mission, vision, and value statements reflect our commitment to excellence and quality education within our discipline. They focus on factors that (a) provide students with a quality learning environment through excellent courses offered by highly qualified professionals in our fields; (b) promote independent thinking, including creative and critical thinking, (c) promote higher-order competencies or skills needed for lifelong learning; (d) challenge students to explore new ideas and seek new opportunities; and (e) provide students with quality learning experiences using a wide range of teaching methods, multicultural perspectives, and available modes of instruction that help meet student needs in a diverse community. Our commitment to excellence is reflected within the programs' values of professional competence and scholarship, continual professional and personal development, academic responsibility and accountability, stewardship and collaboration, individual initiative and creativity, trust and respect, academic freedom, and professional integrity.

Overview of how the program review was conducted.

An instructional program review committee, headed by a chemistry full time faculty member and consisting of ACC faculty from chemistry and other disciplines, ACC students, former ACC students and transfer students, chemistry staff, and an industrial representative was formed and meet several times to discuss and evaluate the department of chemistry. Several aspects of the IPRS were discussed and collaborated with several ACC faculty and staff, including statements provided by the chair Madan Mohan, budget and cost information provided by Ron Johns (Geology) and Bobby Shepherd (Chemistry), program comparisons were discusses with the Assistant Dean and biology faculty Margaret Flemming, lab course discussions with chemistry faculty Debbie Sackett and Elisa Cooper, and assistance with the previous chemistry review from Matiur Rahman.

A SWOT meeting with conducted and the participants reviewed the chemistry program and identified the strengths, weaknesses, opportunities, and threats contained in this report.

This report was completed and submitted to the Office of Institutional Effectiveness and shared with the Chair and the Dean.

Findings:

Progress on previous program review recommendations: See above

Program strengths: See above

Areas for improvement: See above

Key planning issues: See above

Conclusions: What are the major conclusions regarding the present state of the program?

Recommend future directions for the program based on this review:

X Expand services

Maintain services

Reduce services

Close program

Recommendations: Summarize the recommendations.

- Continue to Hire Faculty and Lab Personnel
- Continue to purchase modern lab equipment
- Develop a Distance Learning course
- Renovate and update lab facilities
- Convert existing hazardous lab procedures to green lab procedures
- Continue to improve student completion rates

When you have completed this report, send it via e-mail attachment to the Coordinator for Institutional Planning and Assessment (rwall@austincc.edu).