

**UNIVERSITY SYSTEM OF GEORGIA
COMPREHENSIVE PROGRAM REVIEW FORM**

A. ALL PROGRAM REVIEWS

Institution Name: Kennesaw State University

Date: 7/5/2002

Degree/Major Name: Chemistry

Degree Acronym: B.S.

CIP Code: 40050100

Degree Level: Bachelors

College/School/Division: College of Science & Mathematics

Department: Chemistry & Biochemistry

Were other closely related programs reviewed as part of this program review? For example, if the BA and the BS with majors in Political Science are reviewed at the same time, provide that information:

Yes

No

Provide the names of these other programs so that we may connect these reviews.

The broad-field B.S. in Science Education was recently discontinued in favor of focused B.S. teacher education programs in Chemistry Education and Biology Education. However, the Chemistry Education program was too new to evaluate in the context of program review.

Were external reviewers used to evaluate the results of the program's self-study?

Yes

If yes, please describe their role:

In Spring 2002, an 18-member University Program Review Council (UPRC) including all of the college deans, a tenured faculty member from each college, the VPAA, a department chair representative, and the institutional research director reviewed all undergraduate program self-studies previously completed at the department/program level in a 30-page standard format during Fall 2001. The UPRC completed a standardized evaluation form in which the self-study's ratings and the UPRC's ratings were contrasted on 16 Quality Indicators, 13 Productivity Indicators, and several summary categories including Viability. The UPRC also made detailed and summary recommendations for improvement and future courses of action, frequently beyond those which appeared in the department's self-study for the program under review.

Year of Next Scheduled Program Review: 2006-2007

Accreditations Required (please spell out acronyms)

None.

Accreditations Obtained (please spell out acronyms)

The American Chemical Society (ACS) has accredited the professional chemistry track of the B.S. in Chemistry for ACS certification.

Year of initial accreditation or last program reaccreditation review:

The program has been approved annually since 1987. Its last five-year review was completed in 2001.

Faculty Resources. Describe the faculty resources associated with this degree program by describing the faculty dedicated to the specific program, to the general education program, to services courses for other programs, etc. Include in your discussion the use of full-time and part-time faculty.

Nine full-time faculty members including the Department Chair and Assistant Dean support the program. Thirteen part-time faculty who typically teach lower division chemistry courses are also employed. All of the full-time faculty hold terminal degrees

in a variety of different specialty areas including analytical chemistry, organic chemistry, inorganic chemistry, physical chemistry, and biochemistry. The faculty are particularly strong as teacher-scholars. One colleague, who holds both the University Teaching and University Scholarship Awards as well as a Regents' Excellence Award, has generated over \$2.5 million in grant funding during her career at KSU. Collectively, the department's faculty has secured over \$500,000 in NSF Equipment Grants over the last decade, most of which were match with ETACT funds from the state. All full-time faculty have numerous peer-reviewed publications. Achievements in undergraduate research are particularly strong under this faculty's mentorship.

For more information on this program review, contact:

Ed Rugg
Director of the Center for Institutional Effectiveness
(770) 499-3609
erugg@kennesaw.edu

Was this review:

Scheduled?
Triggered? x

B. SCHEDULED REVIEWS OF PROGRAMS

MAJOR FINDINGS AND RECOMMENDATIONS

Use the *Short Form*, and complete for each program undergoing review.

Major findings should focus on relevant factors from the Comprehensive Program Review Guidelines in the Academic Affairs Handbook. Major findings and recommendations should address the quality, productivity and viability of this program. (limit to 1000 words)

C. TRIGGERED REVIEWS OF PROGRAMS

Use the *Long Form*, and complete for each program undergoing review.

Why was this program reviewed early? Briefly describe all that apply.

Low Enrollment

Few Graduates

Average of 9 graduates per year for FY98, FY99, and FY00. (9.7 after internal correction of IPEDS data)

Low Pass Rates on Licensure Exams

Other (specify)

MAJOR FINDINGS AND RECOMMENDATIONS

Quality

Major findings should focus on relevant factors from the Comprehensive Program Review Guidelines in the Academic Affairs Handbook (resources, such as faculty qualifications, faculty/student ratio, or the budget; program, learning, and service outcomes, such as the success of graduates, faculty scholarly productivity, or the assessment of student learning outcomes; and processes, such as review of the curriculum). What is the quality of this program? Why? (limit to 750 words)

Both the Department's self-study and the UPRC's review judged the overall quality of this program to be strong. The UPRC rated the program strong or very strong on 15 of the 16 quality indicators under review; only the selectivity and achievement of students was rated "satisfactory." The curriculum follows guidelines set forth by the American Chemical Society. In 1987, KSU was the first USG institution outside of the research university group to achieve ACS approval for its Chemistry degree. A well-established undergraduate research program is present as is a strong reliance on high-tech applications and equipment. Curricular advances in biochemistry and environmental Chemistry are underway. All faculty teaching in the major have a doctoral degree and are highly productive in scholarship and grant writing. A recently constructed Science building provides state-of-the-art science laboratories and faculty offices. The faculty and curriculum are strong in racial and cultural diversity. Advising is highly personalized because of the small number of majors. The department sponsors a student chapter of the ACS and is active in promoting chemistry careers for women. Follow-up of graduates revealed that half were teaching in the schools and the other half were divided between graduate school and employment in the private sector. Feedback about the Chemistry program and his faculty from graduates was very positive.

Productivity

Major findings should focus on productivity factors (enrollment and graduates). If the program is continued, what will be done to enhance productivity? (limit to 650 words)

The Department's self-study rated the program's productivity as satisfactory and the external review by the UPRC concurred with that judgment. However, the UPRC observed that a program of such high quality should not have such low productivity. Very few strengths were noted by the UPRC in its evaluation of the chemistry program's productivity. Weaknesses were cited on 6 of 13 measures including annual degree completions, graduation rate/program completion efficiency, enrollment levels in required upper division courses, the faculty's instructional productivity, efficiency/clarity of the curricular design, and the program's ranking in degree productivity within the USG. By KSU standards, the program was substantially below the norm on these measures. Furthermore, unlike most other KSU degree programs which led all or most other state university programs in degree productivity in FY00, the KSU Chemistry program ranked low and its degree productivity fell below many smaller state universities that year.

Annual degree productivity in Chemistry has improved from the three-year average of 9 which triggered an early program review. The number of degrees granted rose to 13 in FY01 and was 13 in FY02. Major gains in the number of declared majors have also been realized since semester conversion. In Fall 1998, the number of Chemistry majors for all classifications combined fell to 75, but has increased in each of the last three years to 164 in Fall 2001, a 119% increase. Similarly, the number of upper division Chemistry majors grew from 44 in 1998 to 66 in 2001, a 50% increase. The strong growth in the number of lower and upper division Chemistry majors bodes well for realizing future improvements in most of the weaknesses cited in this program review. The average number of degrees granted in Chemistry over the past three years (FY00-FY02) climbed to 11, which now exceeds the cutoff for triggered programs.

Viability

Recommendations on whether the program should be continued as is, continued and improved (enhanced, expanded, curtailed, or consolidated) or eliminated, addressing major questions:

A. Continue and strengthen the program

Should the program be continued as a separate degree program? If continuation is recommended, provide sound and compelling reasons that reference

- **Program centrality to the college or university's mission**
- **Program history of student demand and productivity over the last ten years**

- **Duplication of courses with other programs**
- **Distinctiveness of the program**

The UPRC concurs with the Department's self-study that the B.S. in Chemistry be continued and maintained at its current level of resource allocation. The UPRC recommended that the department create a comprehensive, detailed, and substantive action plan and timetable for continuing to improve the program's productivity. The UPRC also recommended that the department prepare and submit an annual progress report to the Dean and VPAA, documenting progress made on improved program productivity. Failure to achieve improved productivity could result in another formal program review before the next regularly scheduled evaluation. Every effort should be made to capitalize on the high quality and untapped potentials of this program to elevate it to a lead position among state universities of the USG within the next few years.

If the recommendation is to continue the program, how will it become more productive? What actions will be taken to strengthen the program and make it more productive? How will funding be obtained to strengthen the program? Should the program be consolidated or merged with other existing programs? Which ones and why?

B. Discontinue the program

Should the program be discontinued as a separate degree program? If discontinuation is recommended, provide sound and compelling reasons that reference

- **Program centrality to the college or university's mission**
- **Impact on this or other departments or programs if the program under review is eliminated**

If the recommendation is to discontinue the program, what would be the timetable for discontinuation? Would there be any savings of funds or resources? How would those funds be reallocated?