

**DEPARTMENT OF CHEMISTRY
INSTITUTIONAL EFFECTIVENESS PLAN
2002-2003**

Mission Statement

The Department of Chemistry teaches and offers degrees at the undergraduate and graduate levels, undertakes research in the discipline of chemistry, serves as a chemical knowledge resource for the New Orleans community as well as the state and nation, and serves in professional organizations. The Department of Chemistry offers four degrees: Bachelor of Arts, Bachelor of Science, Master of Science and Doctor of Philosophy. The Bachelor of Arts degree provides undergraduate students with a basic foundation in chemistry with enough program flexibility so students can obtain training in other areas consistent with their professional aspirations. Students who successfully complete the B.A. degree will be qualified for professional schools, for technical level employment in chemical and chemically related industries, or for certification in secondary school science teachers. The Bachelor of Science degree provides a rigorous foundation in chemistry consistent with the guidelines established by the American Chemical Society (ACS). The UNO B.S. in chemistry meets all the requirements and is certified by the American Chemical Society. Students who successfully complete the B.S. degree are qualified to pursue an industrial career, professional school or graduate work in chemistry. The M.S. degree provides advanced training in chemistry with a concentration in one of four traditionally recognized specialties: Analytical, Inorganic, Organic, or Physical Chemistry. As a terminal degree the M.S. prepares students in positions for teaching in the undergraduate, junior college, or secondary school level or for advanced laboratory positions in industry. As a preparation for a doctoral program, the M.S. degree provides an advanced background and necessary research experience for rapid advancement in a doctoral program. The Ph.D. degree in Chemistry provides students with the most advanced chemical knowledge and research experience. The Ph.D. prepares students to teach and conduct chemical research at the university or professional industrial level.

Reviewed by faculty on 10/02/02 (____)

Approved by: _____
Edwin D. Stevens
Chair, Department of Chemistry
Date

Approved by: _____
Joe M. King
Dean, College of Sciences
Date

**DEPARTMENT OF CHEMISTRY
2002-2003**

Goals and Objectives

Goal 1. The department will provide access to the community to chemical information.

Objective 1.1. Maintain visibility of department and access to chemical knowledge in the community by achieving 20 contacts during 2002-2003.

Strategy 1.1.1. The Chem Club, with assistance from graduate students, will provide yearly “chemical magic shows” to local schools.

Strategy 1.1.2. Faculty will be encouraged to participate in the Speakers Bureau.

Strategy 1.1.3. The department will provide advanced training to area high school teachers by offering a MAST (Master of Arts in Science Teaching) course during the 2002-2003 year.

Strategy 1.1.4. The department will host four meetings NOTOChem (New Orleans Teachers Organization in Chemistry) during the 2002-2003 year.

Strategy 1.1.5. The department will encourage high school teachers and students to become involved in research by supporting 6 teachers and 6 students in research endeavors during the summer semester of each year.

Assessment Tools: Year end report of activities of the Chem Club
 List of Speakers Bureau

Goal 2. The department will secure additional funding through grants.

Objective 2.1. Fifty percent of the tenure-track faculty will have external grants in effect in 2002-2003.

Strategy 2.1.1. New faculty members will be encouraged to travel to offices of those responsible for awarding federal and state grants in coordination with the Office of Research.

Strategy 2.1.2. The department chair will actively encourage all faculty members to submit federal and state grant proposals.

Strategy 2.1.3. Initial proposals from new faculty members will be previewed by a faculty member with existing grants.[]

Assessment Tools: Departmental Annual Report

Goal 3. The department will enhance visibility and reputation through publishing manuscripts, books chapters, and books.

Objective 3.1. Ninety percent of the tenure-track faculty will publish at least one article, book chapter or book in 2002-2003.

Strategy 3.1.1. The department chair will meet with those faculty not published in the previous year to identify obstacles to publishing.

Strategy 3.1.2. New faculty members will be given start-up funds and duties appropriate to publication expectations.

Assessment Tools: Departmental Annual Report.

BACHELOR OF ARTS IN CHEMISTRY
2002-2003

Goals and Objectives

Goal 1. The department will provide high quality training in chemistry for undergraduate students.

Objective 1.1. Achieve knowledge of general chemistry equivalent to 50th national percentile for the median of B.A. majors taking the ACS exam in 2002-2003.

Strategy 1.1.1. Results of exam discussed at regular faculty meeting and referred to Undergraduate affairs Committee for possible action.

Strategy 1.1.2. Topics with poor student performance targeted for emphasis in future course offerings.

Objective 1.2. Achieve knowledge of advanced topics equivalent to 50th national percentile by the median of B.A. majors taking the ACS exam in 2002-2003.

Strategy 1.2.1. Results of exam discussed at a regular faculty meeting and referred to Undergraduate Affairs Committee for possible action.

Strategy 1.2.2. Topics with poor student performance targeted for emphasis in future course offerings.

Assessment Tools: American Chemical Society national exam in general chemistry
 American Chemical Society specialty exams

Goal 2. The department will produce graduates who can communicate chemical knowledge in oral and written form.

Objective 2.1. All graduates will be able to orally explain chemical principles by date of graduation.

Strategy 2.1.1. Upper-level laboratory courses will have additional emphasis on oral laboratory reports.

Strategy 2.1.2. Students in undergraduate research course (CHEM 3094) will be encouraged to orally present their research accomplishments before a faculty committee.

Strategy 2.1.3. If appropriate, student will be asked to repeat presentation.

Objective 2.2. All graduates will be able to explain chemical processes in written form by date of graduation.

Strategy 2.2.1. Current requirement of written presentation of research by undergraduates in undergraduate research course (CHEM 3094) to be enforced.

Strategy 2.2.2. Students will meet with faculty representative to discuss areas of improvement in presentation.

Strategy 2.2.3. If appropriate, student will be required to repeat written presentation.

Assessment Tools: Jury judged oral examination
Jury graded research reports from undergraduate research projects

Goal 3. The department will prepare students for employment in the chemical industry.

Objective 3.1. During the first year of employment, 75 percent of those evaluated will be ranked at least “very good” on a scale from “poor” to “excellent.”

Strategy 3.1.1. Incorporate areas identified by employers as deficient into course content.

Strategy 3.1.2. Develop new courses in areas where graduates are deemed deficient.

Assessment Tools: Employer questionnaires

Goal 4. The department will achieve and maintain high student satisfaction with chemistry program.

Objective 4.1. Student satisfaction deemed overall “good” or better on 80 percent student exit surveys for both Fall and Spring semesters.

Strategy 4.1.1. Results of survey discussed at regular faculty meeting and referred to Undergraduate Affairs Committee for possible action.

Strategy 4.1.2. Department chair will meet individually with faculty to discuss specific items in survey related to faculty members.

Objective 4.2. Achieve or maintain overall rating of at least 2.8 out of 4.0 on student ratings of instruction for each faculty member for undergraduate courses taught during 2002-2003.

Strategy 4.2.1. Faculty will meet with the chair at least yearly to discuss student ratings of instruction and to seek methods of improvement.

Strategy 4.2.2. Faculty will be encouraged to use CELT (Center for Enhancement of Learning and Teaching) to improve teaching skills and learn new methods.

Assessment Tools: Student exit surveys
Student ratings of instruction

Goal 5. The department will increase student retention.

Objective 5.1. Achieve retention rate of those chemistry majors who have completed the freshman sequence to at least equal to the overall University retention rate for Spring 2003.

Strategy 5.1.1. Require all chemistry majors to have a faculty advisor.

Strategy 5.1.2. Improve factors identified as leading to non-retention of students.

Assessment Tools: Reenrollment rate

BACHELOR OF SCIENCE IN CHEMISTRY
2002-2003

Goals and Objectives

Goal 1. The department will provide high quality training in chemistry for undergraduate students.

Objective 1.1. Achieve knowledge of general chemistry equivalent to 60th national percentile for the median of B.S. majors taking the ACS exam in 2002-2003.

Strategy 1.1.1. Results of exam discussed at regular faculty meeting and referred to Undergraduate affairs Committee for possible action.

Strategy 1.1.2. Topics with poor student performance targeted for emphasis in future course offerings.

Objective 1.2. Achieve knowledge of advanced topics equivalent to 60th national percentile by the median of B.S. majors taking the ACS exam in 2002-2003.

Strategy 1.2.1. Results of exam discussed at a regular faculty meeting and referred to Undergraduate Affairs Committee for possible action.

Strategy 1.2.2. Topics with poor student performance targeted for emphasis in future course offerings.

Assessment Tools: American Chemical Society national exam in general chemistry
American Chemical Society specialty exams

Objective 1.3. Maintain ACS Certification of Degree

Strategy 1.3.1. Undergraduate Affairs Committee will review ACS standards on yearly basis.

Strategy 1.3.2. Change curriculum and course content to remain in-line with ACS guidelines.

Assessment Tools: American Chemical Society national exam in general chemistry.
American Chemical Society specialty exams

Re-certification evaluation by American Chemical Society

Goal 2. The department will produce graduates who can communicate chemical knowledge in oral and written form.

Objective 2.1. All graduates will be able to orally explain chemical principles by date of graduation.

Strategy 2.1.1. Upper-level laboratory courses will have additional emphasis on oral laboratory reports.

Strategy 2.1.2. Current requirements for presentation of research by undergraduates in undergraduate research course to be enforced.

Strategy 2.1.3. Students will meet with faculty representative to discuss areas of improvement in presentation.

Strategy 2.1.4. If appropriate, student will be asked to repeat presentation.

Objective 2.2. All graduates will be able to explain chemical processes in written form by date of graduation.

Strategy 2.2.1. Current requirement of written presentation of research by undergraduates in undergraduate research course (CHEM 3094) to be enforced.

Strategy 2.2.2. Current requirements of a written report in the undergraduate research course to be enforced.

Strategy 2.2.3. Students will meet with faculty representative to discuss areas of improvement in presentation.

Assessment Tools: Jury judged oral examination
Jury graded research reports from undergraduate research projects

Goal 3. The department will prepare students for graduate study in chemistry.

Objective 3.1. Achieve average of 50th percentile on GRE chemistry exam for median of students taking the exam within one year of graduation.

Strategy 3.1.1. Correlate student performance with course performance.

Strategy 3.1.2. Obtain feedback from students on areas of difficulty.

Objective 3.2. During the first year of graduate enrollment 80 percent of those evaluated will be ranked at least “very good” on a scale from “poor” to “excellent.”

Strategy 3.2.1. Results of survey discussed at a regular faculty meeting and referred to Undergraduate Affairs Committee for possible action.

Strategy 3.2.2. Department chair will meet individually with faculty to discuss specific items in survey related to faculty members.

Assessment Tools: GRE scores
Graduate school questionnaires

Goal 4. The department will prepare students for employment in the chemical industry.

Objective 4.1. During the first year of employment 75 percent of those evaluated will be ranked as “very good” on a scale from “poor” to “excellent.”

Strategy 4.1.1. Results of survey discussed at regular faculty meeting and referred to Undergraduate Affairs Committee for possible action.

Strategy 4.1.2. Areas identified by employers as deficient incorporated into course content of existing courses.

Strategy 4.1.3. Undergraduate Affairs Committee will consider development of new courses in areas where graduates deemed deficient and where core curriculum is not sufficient.

Assessment Tools: Employer questionnaires

Goal 5. The department will achieve and maintain high student satisfaction with the chemistry program.

Objective 5.1. During the Fall and Spring semesters at least 80 percent of the students surveyed will rate the department as “good” or better.

Strategy 5.1.1. Results of survey discussed at regular faculty meeting and referred to Undergraduate Affairs Committee for possible action.

Strategy 5.1.2. Department Chair will meet individually with faculty to discuss specific items in survey related to faculty members.

Objective 5.2. Achieve or maintain overall rating of at least 2.8 out of 4.0 on student ratings for instruction on each faculty member for undergraduate courses taught during 2002-2003.

Strategy 5.2.1. Faculty will meet with the chair at least yearly to discuss student ratings of instruction and seek methods of improvement.

Strategy 5.2.2. Faculty will be encouraged to use CELT (Center for Enhancement of Learning and Teaching) to improve teaching skills and learn new methods.

Assessment Tools: Student exit surveys
Student ratings of instruction

Goal 6. The department will increase student retention.

Objective 6.1. Achieve retention rate of majors at least equal to the overall University retention rate for 2003.

Strategy 6.1.1. Require all chemistry majors to have a faculty advisor.

Strategy 6.1.2. Seek improvement in courses identified as leading to non-retention of students.

Assessment Tools: Reenrollment rate

**MASTER OF SCIENCE IN CHEMISTRY
2002-2003**

Goals and Objectives

Goal 1. The department will provide advanced training in a chemical specialty.

Objective 1.1. All graduates will complete a research project of publishable quality by graduation.

Strategy 1.1.1. Students will meet regularly with a faculty advisor on matters related to research.

Strategy 1.1.2. Research groups will be encouraged to have regular group meetings to discuss research.

Strategy 1.1.3. Students will present and defend research project before a faculty committee.

Assessment Tools: Referred publication
Departmental pre-orals report
Master's examination report
Thesis of acceptable quality as judged by a jury of faculty members

Goal 2. The department will graduate students who can communicate chemical knowledge in oral and written form.

Objective 2.1. All M.S. will be able to present a professional lecture on a current research topic before graduation.

Strategy 2.1.1. Students will present a professional lecture before the faculty and students and will repeat unsatisfactory presentations. Faculty comments will be provided to the student for areas of improvement.

Strategy 2.1.2. Students will be encouraged to present talks at regional and national scientific meetings

Objective 2.2. All students can adequately communicate chemical knowledge in written form by date of graduation.

Strategy 2.2.1. Students will write first draft of manuscripts submitted for publication and will work with research advisor to improve writing skills.

Strategy 2.2.2. Students who still have difficulty will be encouraged to register for and attend technical writing classes.

Strategy 2.2.3. Students will write thesis and will work with research advisor to improve writing skills and rewrite thesis until acceptable.

Assessment Tools: Publication in scientific literature
 M.S. thesis
 Department seminar presentation
 Scientific presentations

Goal 3. The department will prepare students for doctoral study in chemistry.

Objective 3.1. During the first year of enrollment in a doctoral program, 80 percent of those evaluated will be ranked as at least “very good” on a scale from “poor” to “excellent.”

Strategy 3.1.1. Graduate Affairs Committee will recommend changes in course content related to any deficiencies noted.

Strategy 3.1.2. The Chairman will discuss with the student’s research advisor any areas involving laboratory or research skills noted as deficient.

Assessment Tools: Graduate school questionnaires

Goal 4. The department will prepare students for employment in chemical industry.

Objective 4.1. During the first year of employment, 75 percent of those evaluated will be ranked at least “very good” on a scale from “poor to “excellent.”

Strategy 4.1.1. Graduate Affairs Committee will recommend changes in course content related to any deficiencies noted.

Strategy 4.1.2. The Chairman will discuss with the student’s research advisor any areas involving laboratory or research skills noted as deficient.

Assessment Tools: Employer questionnaires

Goal 5. The department will obtain high student satisfaction with the chemistry program.

Objective 5.1. During the Fall and Spring semesters at least 80 percent of the students surveyed will rate the department as “good” or better.

Strategy 5.1.1. The Department Chair will discuss results of the survey at a regular faculty meeting.

Strategy 5.1.2. The departmental Graduate Affairs Committee will consider areas of improvement

Objective 5.2. Achieve or maintain overall rating of at least 3.0 out of 4.0 on student ratings of instruction for each faculty member for graduate courses taught during 2002-2003.

Strategy 5.2.1. Faculty will meet with the Chair at least yearly to discuss evaluations and seek methods of improvement.

Strategy 5.2.2. Faculty will be encouraged to use CELT (Center for Enhancement of Learning and Teaching) to improve teaching skills and learn new methods.

Assessment Tools: Student ratings of instruction
 Student exit survey

DOCTOR OF PHILOSOPHY IN CHEMISTRY
2002-2003

Goals and Objectives

Goal 1. The department will provide advanced training in a chemical specialty.

Objective 1.1. All graduates will complete a research project of publishable quality by graduation.

Strategy 1.1.1. Students will meet regularly with a faculty advisor on matters related to research.

Strategy 1.1.2. Research groups will be encouraged to have regular group meetings to discuss research.

Strategy 1.1.3. Student's research effort will be evaluated in pre-orals meeting by a faculty committee in the fifth semester of their graduate careers to ensure adequate progress towards degree completion

Strategy 1.1.4. Student's dissertation will be evaluated by and the content defended before a faculty committee

Assessment Tools: Referred publication
 Departmental pre-orals report
 Qualifying examination report
 Dissertation of acceptable quality as judged by a jury of faculty members

Goal 2. The department will graduate students who can communicate chemical knowledge in oral and written form.

Objective 2.1. All Ph.D. graduates will present a professional lecture on a current literature research topic before graduation.

Strategy 2.1.1. Students will present a professional lecture before the faculty and students and will repeat unsatisfactory presentations. Faculty comments will be provided to the student for areas of improvement.

Strategy 2.1.2. Students will present a professional lecture before the faculty and students on a literature topic and will repeat unsatisfactory presentations. Faculty comments will be provided to the student for areas of improvement.

Strategy 2.1.3. Students will be encouraged to present talks at regional and national scientific meetings

Objective 2.2. All students can adequately communicate chemical knowledge in written form by date of graduation.

Strategy 2.2.1. Students will write first draft of at least one manuscript submitted for publication and will work with research advisor to improve writing skills.

Strategy 2.2.2. Students who still have difficulty will be encouraged to register for and attend technical writing classes.

Strategy 2.2.3. Students will write a dissertation and will work with research advisor to improve writing skills and rewrite thesis until acceptable.

Assessment Tools: Publication in scientific literature
 Dissertation
 Department seminar presentation
 Scientific presentations

Goal 3. The department will prepare students for employment in chemical industry.

Objective 3.1. During the first year of employment, 75 percent of those evaluated will be ranked at least “very good” on a scale from “poor to “excellent.”

Strategy 3.1.1. Areas identified as involving course work will be incorporated into changes in course content.

Strategy 3.1.2. Areas identified as involving laboratory or research skills will be given to the student’s research advisor

Assessment Tools: Employer questionnaires

Goal 4. The department will prepare students for academic research careers.

Objective 4.1. All students can develop original research ideas by date of graduation.

Strategy 4.1.1. Students will present a proposal-style written presentation of their research ideas at a pre-oral meeting with their faculty committees.

Strategy 4.1.2. Students will suggest and defend future areas of research at their final oral examinations.

Assessment Tools: Pre-oral proposal evaluation
Dissertation

Goal 5. The department will obtain high student satisfaction with the chemistry program.

Objective 5.1. During the Fall and Spring semesters at least 80 percent of the students surveyed will rate the department as “good” or better.

Strategy 5.1.1. The Department Chair will discuss results of the survey at a regular faculty meeting.

Strategy 5.1.2. The departmental Graduate Affairs Committee will consider areas of improvement

Objective 5.2. Achieve or maintain overall rating of at least 3.0 out of 4.0 on student ratings of instruction for each faculty member for graduate courses taught during 2002-2003.

Strategy 5.2.1. Faculty will meet with the Chair at least yearly to discuss evaluations and seek methods of improvement.

Strategy 5.2.2. Faculty will be encouraged to use CELT (Center for Enhancement of Learning and Teaching) to improve teaching skills and learn new methods.

Assessment Tools: Student ratings of instruction
Student exit survey
Pre-oral examination report
Final oral examination