

Approved  
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**Department of Chemistry**

**Statement of Criteria, Standards, and Needs  
to be used in Evaluations**

DEPARTMENTAL NEEDS

The Chemistry Department strives to provide a superior educational experience to all students enrolled in its courses. These students fall into several categories:

- 1) Students intending to major or minor in chemistry;
- 2) Students intending to major in other fields that require a background in chemistry;
- 3) Students interested in health sciences or 3-2 engineering programs;
- 4) Students interested in studying chemistry as part of a liberal education.

In order to fulfill the needs of all its students, the department must provide courses at the following four levels:

1. Introductory Courses (100 level). These courses normally have no prerequisites and provide a foundation for further study in chemistry or provide a background in chemistry as part of a liberal education.

2. Core Disciplinary Courses (200-400 level). These courses will normally have prerequisites and are required of students majoring in chemistry. Some of these courses may be required for students majoring in other fields. A department providing a quality undergraduate curriculum must include instruction in the five core areas of chemistry listed below.

Chemical Analysis and Instrumental Methods of Analysis  
Organic Chemistry  
Physical Chemistry  
Inorganic Chemistry  
Biochemistry

Thus the department needs to have at least one, and preferably two, faculty members with expertise in each of the areas listed above.

3. Advanced Elective Courses (300-400 level). These courses will have a core disciplinary course as a prerequisite and will normally be taken as an elective by chemistry majors to provide them with an in-depth look at some modern area of chemical research.

4. Senior Research Thesis (Chem 490). This course serves as a capstone experience for B.S. chemistry majors, and serves several important functions as described in the American Chemical Society (ACS) curricular guidelines:

Undergraduate research can integrate the components of the core [chemistry] curriculum into a unified picture and help undergraduates acquire a spirit of inquiry, initiative, independence, sound judgment, patience, persistence, alertness, and the ability to use the chemical literature.

Also, supervision of research helps the faculty maintain their enthusiasm, professional competence, and scholarly productivity.

A successful project requires proper and careful attention by the faculty advisor, for without it the research can be unproductive, demoralizing, and even dangerous. It places heavy demands on the faculty, the students, and the institution.

Faculty members must be willing and able to teach courses at each of these four levels. This includes being willing and able to provide laboratory instruction in the safe handling of chemicals, the practical techniques used in chemical analysis and synthesis, and the proper use of modern chemical instrumentation.

## PROCEDURES FOR EVALUATIONS

All departmental evaluations will be conducted in accordance with the current Faculty Code. Specifically, each of the following steps will be included in the evaluation process.

- 1) The candidate being evaluated will prepare a written statement that will be available to others in the department during the evaluation process. The statement should include a discussion of goals, objectives, and accomplishments in the areas of Teaching, Professional Growth, and University Service. (In the case of evaluations for promotion the candidate should also address the areas of Advising and Community Service.) The candidate may also include any other information he or she wishes to bring to the attention of the department members and the Faculty Advancement Committee.
- 2) A file, available to all members of the department, will be established. It will contain the statement of the candidate, material related to Teaching (syllabi, tests, assignments, and student evaluations for all courses requiring evaluations), documentation relevant to Professional Growth (for example, grant applications or publications), and any other information deemed suitable by the candidate.
- 3) Ongoing, full-time, resident members of the department will read the candidate's file and participate in the evaluation. Non-resident, ongoing, full-time faculty, as well as other department faculty, may participate in the evaluation process to the extent they see fit.
- 4) Members of the department should make, and record the dates of, classroom visits to the classes of the candidate. Our goal is that every faculty member should visit each of the candidate's classes which are to be the basis for evaluation at least once prior to each evaluation, although circumstances may preclude this.
- 5) Faculty members should take whatever other actions they deem useful to inform their evaluation; examples of such actions include formal or informal discussions with the candidate, laboratory observations, or talking to students.
- 6) Faculty members participating in the evaluation will determine if, based on all assembled evidence, the candidate meets the university and departmental standards.

- 7) Members of the department will write a letter of recommendation prior to a general departmental meeting and give it to the department chairperson or designate. Individuals may choose to send their recommendations directly to the Dean of the University as specified in the Faculty Code.
- 8) Members of the department will meet to discuss individual recommendations and will arrive at a departmental recommendation.
- 9) The department chairperson (or designate if the chair is being evaluated) will write a formal departmental recommendation summarizing the departmental letters and departmental deliberations which will be reviewed by the department before being sent. A copy of that recommendation will be given to all members of the department, including the member being evaluated. Additionally, the chairperson will provide the member being evaluated with a written list of those individuals participating in the department's deliberations and those who submitted letters.
- 10) All materials will be forwarded to the Dean of the University.
- 11) If after reviewing the file and the chairperson's summary letters, the faculty member feels that she or he has been unfairly or inadequately evaluated, that individual has the right to pursue those concerns as provided by the Faculty Code.

#### EVALUATION CRITERIA AND STANDARDS

In accordance with the Faculty Code, the Chemistry Department will evaluate a faculty member for promotion (P), and tenure (T) on the basis of the faculty member's performance in the following areas:

- A) Teaching (P,T)
- B) Professional growth (P,T)
- C) Advising (P)
- D) University service (P,T)
- E) Community service (P)
- F) Needs of the department and university (T)

Other evaluations of faculty members will also be based on the faculty member's performance in the relevant areas A-E above.

The chairperson will assure that each relevant criterion is addressed in the summary letter. The department recognizes that qualitative assessments made on the basis of the above criteria can not be treated in a quantitative manner.

The department asserts that excellence in teaching and continuous professional growth are minimum expectations for a positive promotion or tenure recommendation. The department further asserts that university or community service must not be substituted for those minimum expectations.

#### A) TEACHING

In order to fulfill obligations to students and the university all members are expected to be qualified and willing to teach courses in each of the following areas:

- 1) Introductory and Core courses numbered 100-199
- 2) Required courses in the major numbered 200-499
- 3) Advanced elective courses numbered 300-499
- 4) Student research, CHEM 490

The department expects all members to accept teaching responsibilities which best meet the needs of the department and to show a willingness to respond to changing university and department curricular needs. However, evaluations will be based on courses actually taught.

Most departmental offerings include a laboratory requirement because of our recognition of the importance of the laboratory experience, both as a pedagogical tool and as an important aspect of the chemical enterprise. The faculty member should treat the laboratory with the same attention, enthusiasm, and care as other parts of the course.

Evaluation of teaching performance should include consideration of the following characteristics:

- 1) The candidate must choose appropriate materials for the course.
- 2) The candidate must establish reasonable objectives by considering the credit given for the course and the level of students who will be electing the course.
- 3) The candidate must be current and plan for new directions in curricula.
- 4) The candidate must have the course(s) well organized.
- 5) The candidate must use class time efficiently.
- 6) The candidate must be accessible outside of the classroom.
- 7) The candidate must establish methods to evaluate both performance in the course and whether course objectives were accomplished.
- 8) The candidate must contribute to a favorable atmosphere for learning.
- 9) The candidate must plan the laboratory with course objectives in mind to include both merging of theory with experiment and educating safe experimentalists.

Items 1, 2, 3, 7, and 8 must be evaluated by consideration of the course textbook, course syllabus, examinations, assignments, materials used in the classroom, and by discussions with the candidate and colleagues. Items 4 and 5 may be judged by personal observations and from student evaluations. Item 6 may be judged by observations of the candidate, by conversations with students, or by student

evaluations. Item 9 may be evaluated by interviews with the candidate, examination of course syllabi, and by observations in the laboratory.

## PROFESSIONAL GROWTH

Evidence of professional growth may be established by a record of continuous progress toward goals, elaborated by the individual faculty member and the department, in the following areas.

- 1) Research. An active involvement in research helps to:
  - a) Maintain and increase an individual's competence;
  - b) Maintain and increase the individual's interest and enthusiasm;
  - c) Provide an opportunity for the individual to pursue original, creative work that advances knowledge in the field.

Research should be interpreted broadly and could include actual chemical research, work related to chemical education, research in some area of applied chemistry, or research related to a particular consultation effort. The faculty member should be evaluated against a long-term commitment. Research with undergraduates is a particularly valuable way to serve the department's student research requirement while enhancing the faculty member's research effort.

- 2) Publications. Publication of scientific work is encouraged and is considered meritorious. Publications may take the form of textbooks, research monographs, grant proposals, chemical reviews, book reviews, scientific research articles, and articles related to the teaching of chemistry. Examples of written work should appear in the evaluation file.

- 3) Formal Presentation. The individual is expected to report the results of research or other study. Presentations may be done in any of several forms:

- a) as part of the department or division's seminar program,
- b) at a national or regional meeting of the American Chemical Society or other suitable professional society,
- c) to the public or university community.

- 4) Currency. The candidate must stay current in the discipline. Currency will be judged against the expectations for quality teaching in those areas in which the member has teaching responsibilities.

- a) The candidate may be active in professional organizations. These activities must be identified by the candidate in his or her statement.
- b) The candidate should attend meetings and seminars of professional societies. These activities must be identified by the candidate in his or her letter.
- c) The candidate should participate in the University's sabbatical or leave program. This is a major way for a candidate to maintain professional skills and currency.
- d) The candidate should be active in a current area of chemical research.
- e) The candidate may maintain and develop professional contacts.

5) Breadth. The department recognizes the value of activities which increase the professional breadth of a candidate. For example, development of the capacity to teach an upper level interdepartmental course may extend the candidate's range of competence.

#### C) ADVISING

Every member of the faculty should participate in the advising activity in order to establish and maintain a good advising system in the university.

Advising is not limited to the formal advisor-advisee relationship, but may simply be appropriate interaction with students on a one-to-one or small-group basis. Individual faculty members should properly be involved in discussions with students relative to their goals, abilities, interests, and needs. We do not know of any suitable quantitative measure for the quality of advising since the results of advice may not become obvious for many years. Nevertheless, the faculty member is expected to be an active participant in the department advising process.

The faculty member should establish regular office hours, formally posted, during which students may seek advice and help. The faculty member is encouraged to be as open and available to students as is possible given the requirements of their professional work. These activities will be judged by observations of and personal discussion with the candidate. The candidate should document advising activities, including advising of individuals, career counseling, participation in the freshman advising program, and sponsorship of the ACS Student Affiliate Group.

#### D) UNIVERSITY SERVICE

The department encourages members to participate in the governance process by serving on university committees or the Faculty Senate. However, University Service should not be construed to include only participation in university governance. The faculty member also serves the university when he or she acts as a sponsor for a Student club (e.g., the ACS Student Affiliates Chapter), gives presentations to outside groups (e.g. speaking at local high schools or colleges), serves on special committees (e.g. the Health-Science Advisory Committee), organizes the divisional seminar program, or participates in any of a number of activities that aid in providing a rich University environment or that bring prestige to the University.

The department expects all members of the faculty to participate in departmental governance and share in the responsibilities required for efficient operation of the department. These activities include chairing the department, purchasing and maintaining instruments, preparing applications for funding on behalf of the department, representing the department at Alumni functions, Parents' Day, or other University Events, transporting students to professional meetings, or any of the many activities necessary for efficient operation of the department.

Activities in the area of university service must be documented by the candidate, and may also be assessed by personal observation.

#### E) COMMUNITY SERVICE

The candidate may provide information in this area as part of the letter. This does not seem to be particularly important for a person to be a valued member of the Chemistry Department.

F) NEEDS OF THE DEPARTMENT AND UNIVERSITY

During its consideration of a candidate for tenure, the department will assess how the candidate meets the needs of the department as described in the opening section of this document.

*Revisions approved by the Professional Standards Committee (March 2004)*