

# Department of Chemical Engineering and Materials Science, Institute of Technology

## 7.12 Criteria for Promotion and Tenure

*This statement was adopted by vote of the faculty of the Department of Chemical Engineering and Materials Science on February 15, 2007 and was approved by the Senior Vice President for Academic Affairs and Provost on June 28, 2008.*

### I. Introduction

This document describes with more specificity the indices and standards that will be used to evaluate whether candidates meet the general criteria in Sections 7.11 and 9.2 of Regents Policy on *Faculty Tenure* for the following personnel evaluations:

- A. Annual performance appraisal of progress toward achieving tenure.
- B. Recommendation for awarding indefinite tenure according to Regents Policy on *Faculty Tenure* (University of Minnesota, 2007; hereafter cited as *Faculty Tenure*), Section 7.11. General Criteria.
- C. Recommendation for promotion to Associate Professor and Full Professor according to Regents Policy on *Faculty Tenure*, Section 9.2 Criteria for Promotion to Professor.
- D. Annual performance appraisal for post tenure review according to Section 7a.1 and 7a.2 of *Faculty Tenure*.

In addition, this document is consistent with the *Procedures for Reviewing Candidates for Tenure and/or Promotion: Tenure-Track and Tenured Faculty* (2007), hereafter referred to as the *Procedures*.

### II. Department of Chemical Engineering and Materials Science Mission Statement

The mission of the Department of Chemical Engineering and Materials Science, henceforth referred to as the Department, comprises three objectives: (1) the education of students and professionals at all levels through a dedication to effective teaching, (2) the pursuit and dissemination of new knowledge through original and creative research, and (3) the advancement and application of scientific and technical knowledge through professional service.

### **III. Annual Appraisals of Probationary Faculty**

Probationary faculty will be reviewed annually and progress will be evaluated according to Section 7.11 in *Faculty Tenure*, the *Procedures*, and the criteria described here (Section IV).

Mentoring is an important component of the promotion and tenure process. The department Head assigns a committee of at least three members for each probationary faculty member. The members are selected from among the tenured faculty of the Department. This committee provides guidance and advice on teaching, research, service obligations, advising of students, and funding opportunities, as needed.

The Department Head will be responsible for soliciting an annual report from each probationary faculty member on their teaching, research, and service activities plus any additional information they deem necessary for the review according to this 7.12 statement and the *Procedures*, Sections 5 through 8. The Head may seek input from other sources, including department faculty, and faculty in other departments or other institutions, as necessary to obtain a full understanding of the probationary faculty member's activities and progress. A written report will be prepared and made available to the tenured faculty for their comments and recommendation. It will be the responsibility of the Department Head to review the report and the faculty's recommendations with the probationary faculty member. This will be the basis for the annual Form 12 for the review of probationary faculty.

Tenure decisions may be made in any year of the probationary period, as described in Section 5.2 of *Faculty Tenure* and Section 9 of the *Procedures*. A candidate must be considered in a formal tenure review in the last year of the probationary period.

In accordance with Section 5.5 of *Faculty Tenure*, the probationary period may be extended by one year at a time at the request of the faculty member for childbirth/adoption, caregiver responsibilities, or medical reasons. The criteria for evaluation of faculty who have had their probationary period extended are no different than the criteria for faculty who do not have an extension of the probationary period. Extension of the probationary period in accordance with Section 5.5 may not be a factor in the evaluation.

The department may recommend termination of a candidate's appointment at any time, in accordance with Section 10 of the *Procedures*.

### **IV. Conferral of Indefinite Tenure**

Section 7.11 of *Faculty Tenure* specifies the criteria for tenure:

**7.11 General Criteria.** What the University of Minnesota seeks above all in its faculty members is intellectual distinction and academic integrity. The basis for awarding indefinite tenure to the candidates possessing these qualities is the determination that

each has established and is likely to continue to develop a distinguished record of academic achievement that is the foundation for a national or international reputation or both [3] This determination is reached through a qualitative evaluation of the candidate's record of scholarly research or other creative work, teaching, and service [4]. The relative importance of these criteria may vary in different academic units, but each of the criteria must be considered in every decision [5]. Demonstrated scholarly or other creative achievement and teaching effectiveness must be given primary emphasis; service alone cannot qualify the candidate for tenure. Interdisciplinary work, public engagement, international activities and initiatives, attention to questions of diversity, technology transfer, and other special kinds of professional activity by the candidate should be considered when applicable. The awarding of indefinite tenure presupposes that the candidate's record shows strong promise of his or her achieving promotion to professor.

[3] "Academic achievement" includes teaching as well as scholarly research and other creative work. The definition and relative weight of the factors may vary with the mission of the individual campus.

[4] The persons responsible and the process for making this determination are described in subsections 7.3 through 7.6.

"Scholarly research" must include significant publications and, as appropriate, the development and dissemination by other means of new knowledge, technology, or scientific procedures resulting in innovative products, practices, and ideas of significance and value to society.

"Other creative work" refers to all forms of creative production across a wide range of disciplines, including, but not limited to, visual and performing arts, design, architecture of structures and environments, writing, media, and other modes of expression.

"Teaching" is not limited to classroom instruction. It includes extension and outreach education, and other forms of communicating knowledge to both registered University students and persons in the extended community, as well as supervising, mentoring, and advising students.

"Service" may be professional or institutional. Professional service, based on one's academic expertise, is that provided to the profession, to the University, or to the local, state, national, or international community. Institutional service may be administrative, committee, and related contributions to one's department or college, or the University. All faculty members are expected to engage in service activities, but only modest institutional service should be expected of probationary faculty.

[5] Indefinite tenure may be granted at any time the candidate has satisfied the requirements. A probationary appointment must be terminated when the appointee fails to satisfy the criteria in the last year of probationary service and may be terminated earlier if the appointee is not making satisfactory progress within that period toward meeting the criteria.

To be awarded indefinite tenure in the **Department of Chemical Engineering and Materials Science**, a faculty member must demonstrate effectiveness in teaching and must establish a record of excellence and creativity in scholarly research and its dissemination. These are the primary criteria, and the fulfillment of both is a minimum requirement for the awarding of indefinite tenure. Extraordinary distinction in teaching alone, or in research alone, is not sufficient for the granting of indefinite tenure.

A faculty member may choose to participate in service to the profession and in other institutional governance and service activities. These contributions, however, are secondary to the teaching and research components in evaluations leading to decisions regarding the granting of tenure. An outstanding record in the service component alone is not, by itself, sufficient to form the basis for a recommendation of indefinite tenure.

When considering the record of probationary faculty who have stopped the tenure clock (Section 5.5 of *Faculty Tenure*), the criteria for promotion and tenure are no different than the criteria for faculty who have not been granted an extension of the probationary period. That is, a record of six years post-hiring with a one-year stopping of the clock must be considered the same way that one considers five years post-hiring with no stopping of the tenure clock.

## **A. Teaching**

Effectiveness in teaching is assessed from the candidate's contributions to the overall teaching mission of the university including, where appropriate, classroom, laboratory and individualized instruction at both undergraduate and graduate levels, the supervising of graduate students, and the advising of postdoctoral personnel.

Examples of factors that may be used in the evaluation of effectiveness in teaching at the undergraduate level include, but are not limited to, the following:

- Written evaluations by students. Where quantitative course evaluations are used, performance is expected to be at least in the satisfactory range. Student evaluations from different courses, and different types of course (e.g., large undergraduate courses vs. graduate classes) can vary systematically in ways that do not only reflect the quality of teaching. Whenever possible, student evaluations will thus be assessed in the context of historical departmental norms for a specific course or type of course.
- Written evaluations by peers. Faculty peer evaluations may be based upon invited classroom visits and evaluation of written course materials. Many of the larger undergraduate courses in the department are taught by several faculty members. Senior faculty members who have worked together with a probationary faculty member as instructors in a given course will be asked to provide an evaluation of teaching effectiveness.
- Development of new courses and/or laboratories.
- Development of new instructional materials for existing courses.
- Supervision of undergraduate research projects.

- Advising of undergraduate and professional student organizations.
- Receiving local and/or national awards for teaching.

If there is reason for concern about the teaching effectiveness of a probationary faculty at any stage of the probationary period, evidence of steady improvement will be considered.

At the graduate level, the primary consideration in establishing teaching effectiveness is expertise in the teaching of advanced courses, in the conducting of graduate seminars, and in the supervising of graduate students at the masters and doctoral levels, including peer evaluation of the progress of the candidate's advisees. Other factors that may be taken into consideration at the graduate level are:

- written evaluations by students;
- written evaluations by peers based upon classroom and/or seminar visits;
- development of new courses and/or laboratories;
- supervision of postdoctoral personnel and other post-baccalaureate programs and students.

## **B. Research**

The quality of a candidate's original research and the impact of the work within the candidate's area of research are the primary criteria by which professional distinction in research is established. Examples of factors upon which an analysis of the research accomplishments of the candidate may be based include, but are not limited to, the following:

- Written evaluations of the candidate's research activities and of the candidate's publications in peer-reviewed research journals and research monographs. These evaluations are requested from persons who are generally recognized as leaders in the candidate's research area. Effort should be made to obtain at least 8 letters of evaluation. The reviewers may include persons within the University but must include at least 6 evaluations from outside the University, some of whom should be of international stature. The candidate will be asked to suggest the names of reviewers to the Department Head in consultation with the chair of his or her mentoring committee. The *Procedures* require that the Department should seek appraisals both from persons suggested by the candidate and from other recognized scholars in the field. About half of the chosen reviewers should be chosen from among those suggested by the candidate, and the remainder chosen by the chair of his or her mentoring committee in consultation with the Department Head.
- Written evaluations of research or other short publications, such as abstracts and conference proceedings, that are not subject to peer review. Evaluations of such publications may be part of the documentation upon which a decision about the quality of research is based, but may not form the primary basis of this decision.

- Participation in professional conferences, symposia, meetings, and special lectures, especially those for which participation was by invitation.

Research in the Department of Chemical Engineering and Materials Science spans a wide variety of subjects, many of which overlap with the domains of other engineering and scientific disciplines. The assessment of the quality and impact of the candidate's research will be made within the context of his or her chosen area of research. Evaluations will be sought from experts in that area, who may be affiliated with disciplines other than chemical engineering or materials science. Collaborative research will be evaluated by obtaining information both from the candidate and from senior collaborators regarding the candidate's contribution to the work.

In evaluating the candidate's research contributions through the various avenues of publication and presentation, the objectives are to establish that the work is of high quality, that it is a scholarly and creative contribution to the candidate's professional discipline, and that it is a measure of the candidate's potential to make continuing contributions to his or her research area.

Other evidence of the candidate's research accomplishments and reputation may include, but are not limited to, the following examples:

- Election to prestigious national organizations that recognize excellence in a discipline.
- Research awards and honors granted by professional societies, government agencies, and industry.
- Patents, inventions, technology transfer, and other such developments of a significant scientific or engineering nature.
- Publication of scholarly review articles and research monographs.

Probationary faculty are expected to pursue external funding to support their research. This includes supporting the salary and fringe benefits of graduate students and postdoctoral appointees, purchasing equipment, paying for materials and supplies, and other routine expenses associated with operating a competitive research group. The pursuit of funding is necessary to the development and maintenance of an active research program. It is understood that a candidate's success in obtaining external funding may be affected by the funding environment in his or her research area, which can vary over time and between different research areas. Each probationary faculty member is expected to demonstrate a concerted effort to obtain external funding, by the submission of competitive research proposals, and may be asked to share research proposals and/or proposal reviews with his or her mentoring committee.

## C. Service

Service to the profession is an integral component of a faculty member's professional obligations. It enhances the faculty member's professional reputation, and it brings recognition to the Department and the University. By itself, however, service to the profession is not a sufficient basis for the granting of tenure.

Examples of service contributions to the profession include, but are not limited to, service as:

- Editor or associate editor of a refereed scientific or technical journal.
- Officer in a national or international scientific or technical society.
- Member of a national or international scientific or technical committee.
- Member of a governmental or private advisory committee.
- Organizer or member of the organizing committee for a national or international symposium or conference.
- Reviewer of technical and scientific papers for peer-reviewed journals and conference presentations.
- Reviewer of proposals for funding agencies.
- Participant in public outreach and education.

Participation in the governance of the institution and other services to the University and the Department is expected of all faculty and may be included as additional support for a tenure recommendation. Examples of such services include, but are not limited to, active participation in departmental, collegiate, and University committees. Participation in public outreach events and public education is encouraged and valued, but is not a criterion for tenure.

## V. Promotion

The following paragraphs describe the criteria for promotion to tenured ranks from within the Institute of Technology. The same criteria and standards are applied for appointments from outside.

### A. To Associate Professor (with Tenure) from Assistant Professor (Probationary)

Promotion to the rank of associate professor from the rank of probationary assistant professor in the **Department of Chemical Engineering and Materials Science** is always accompanied by the granting of permanent tenure. Thus a candidate for promotion to associate professor must have established a professional record that meets the requirements for effectiveness in teaching and professional distinction in research as set forth in Section IV. Service contributions are also included in the evaluation of the candidate, but cannot be used in place of either the teaching or the research criteria.

## **B. To Associate Professor (with Tenure) from Associate Professor (Probationary)**

The granting of indefinite tenure to an associate professor on a probationary appointment requires that the candidate meet all the requirements for effectiveness in teaching and professional distinction in research as set forth in Section IV.

## **C. To Professor from Associate Professor**

Section 9.2 of *Faculty Tenure* specifies the criteria for promotion to full professor:

*9.2 Criteria for Promotion to Professor.* The basis for promotion to the rank of professor is the determination that each candidate has (1) demonstrated the intellectual distinction and academic integrity expected of all faculty members, (2) added substantially to an already distinguished record of academic achievement, and (3) established the national or international reputation (or both) ordinarily resulting from such distinction and achievement [8]. This determination is reached through a qualitative evaluation of the candidate's record of scholarly research or other creative work, teaching, and service [9]. The relative importance of these criteria may vary in different academic units, but each of the criteria must be considered in every decision. Interdisciplinary work, public engagement, international activities and initiatives, attention to questions of diversity, technology transfer, and other special kinds of professional activity by the candidate should be considered when applicable. But the primary emphasis must be on demonstrated scholarly or other creative achievement and on teaching effectiveness, and service alone cannot qualify the candidate for promotion.

[8] "Academic achievement" includes teaching as well as scholarly research and other creative work. The definition and relative weight of the factors may vary with the mission of the individual campus. Not being promoted to the rank of professor will not in itself result in special post-tenure review of a tenured associate professor.

[9] The persons responsible for this determination are the full professors in the unit who are eligible to vote. The outcome of the vote is either promotion to the rank of professor or continuation in rank as an associate professor. The procedures for voting are identical to those outlined in Section 7.4 for the granting of indefinite tenure, the nondisclosure of grounds for the decision (Section 7.5), and the review of recommendations (Section 7.6). In addition, a petition to the Judicial Committee for review of a recommendation of continuation in rank as an associate professor follows the procedures specified in Section 7.7 for decisions about promotion to associate professor and conferral of indefinite tenure.

In the Department of Chemical Engineering and Materials Science, candidates for promotion to full professor are expected to have a record of accomplishment that exceeds that achieved for promotion to associate professor. All associate professors are expected to work to achieve promotion to full professor. It is the responsibility of the department

head to advise the associate professors on their progress as part of the annual departmental performance review process.

A candidate for promotion to the rank of professor must have achieved a high level of professional distinction and a national and/or international reputation through research contributions to the candidate's discipline that are distinguished by substance, quality and creativity, and through consistently high standards in teaching. Service to the profession, participation in the governance of the institution, and other services to the department, college, and University are expected from candidates for promotion to professor, but they are not in themselves bases for promotion to the rank of professor. Promotion to the rank of professor will not be granted solely on the basis of length of service to the academic unit.

For promotion to professor, the candidate is expected to satisfy the criteria specified in Section IV, with emphasis on:

- High quality research that indicates that the candidate is among the leaders in the field, as documented by letters from acknowledged national and international leaders and contributors to the knowledge base in the field.
- Demonstrated high quality teaching.
- A record of effective advising of masters and doctoral degree candidates.
- Effective advising of post-doctoral personnel who are involved in the candidate's research.

Examples of other factors that may be used to establish a candidate's professional reputation include, but are not limited to, the following:

- Invitations to national and international symposia and conferences.
- Membership and the holding of office in professional societies.
- General professional contributions such as editorships, expository writing, and other activities that enhance the professional stature of the candidate.

The methods of assessment of the performance of a candidate being considered for promotion to the rank of professor are the same as those employed in the granting of tenure.

## **VI. Post Tenure Review of Faculty Performance**

The goals and expectations for tenured faculty parallel those used in the granting of tenure, while also taking into account the different stages of professional development. Tenured faculty in the **Department of Chemical Engineering and Materials Science** are expected to maintain an active research program, teach courses as required by the department, advise students in a satisfactory manner, and serve the goals of the Department and the college. They are also expected to support their research activities as necessary and to publish and present their research results when appropriate. Examples of activities that evidence an active program include: advising and financially supporting

graduate students and/or postdocs; directing a multifaculty center; submitting proposals for research and educational support; developing graduate and undergraduate courses.

According to Section 7a of *Faculty Tenure* all faculty are reviewed annually as part of the annual merit review process in accordance with Senate policy. The Department has a Post Tenure Review Committee of three full professors nominated by the department Head and ratified by secret ballot by the tenured faculty. If, during the course of the annual review process, both the Department Head and the Post Tenure Review Committee find a faculty member's performance to be substantially below the goals and expectations of the Department for more than five years, they must send a letter or memorandum to the faculty member stating that finding. The letter must be signed both by the Department Head and by all members of the Committee, must specify the deficiencies, and must set a time period of at least one year, during which the faculty member should address the identified problems. Efforts must be made at this point in the process to assist the faculty member in remedying perceived deficiencies.

If the faculty member's performance continues to be below expectations, then the procedures described in 7a.3 of *Faculty Tenure* will be followed.

## **VII. Procedures**

The departments of the Institute of Technology comply with the procedures as provided by Sections 7.4, 7.61 and 16.3 of *Faculty Tenure*.

During the decision year for a probationary faculty member, the Department Head assigns a three (or more) member committee to oversee the promotion process. In the decision year, if not before, this committee, in consultation with the Department Head, is responsible for soliciting the letters of recommendation for promotion and tenure. The candidate working with his or her mentoring committee is responsible for assembling the dossier in accordance with the guidelines provided by the Institute of Technology. The decision of whether to grant tenure is made at a meeting of the tenured faculty of the Department. All of the tenured faculty are expected to have reviewed the candidate's file prior to the meeting and participate in the vote. After discussion, the faculty votes by secret ballot. [Tenured faculty who are absent from the university for an extended period, such as a sabbatical or other leave of absence, will be given the option of voting in absentia]. A two-thirds majority of the faculty eligible to vote is required for a positive decision. The same procedures and voting standard will apply to decisions for promotion to full professor, for which all of the full professors are expected to review the file and to participate in the vote. See the Procedures for more details regarding voting, dossier preparation, and rights and responsibilities of candidates.