

## UMD Department of Chemical Engineering

Indices and Standards for Tenure and Promotion to Professor as Required by Section 7.12 of the Board of Regents Policy on Faculty Tenure (June 10, 2011) and Indices and Standards for Promotion to Associate Professor

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### **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 (Appendix 1) of the *Board of Regents Policy on Faculty Tenure* (June 10, 2011) with revisions noted in the *Tenure Code Application to the UEA Contracts*,
- the general criteria for promotion to associate professor and
- the general criteria for promotion to professor as described in Section 9.2 (Appendix 2) of the *Board of Regents Policy on Faculty Tenure* (June 10, 2011) with revisions noted in the *Tenure Code Application to the UEA (University Education Association) Contracts*.

### **II. Departmental Mission**

The mission of the Department of Chemical Engineering at the University of Minnesota Duluth is to offer undergraduate students a high quality educational experience that includes engineering theory, application, experimentation, and design. The Department is dedicated to achieving recognition for excellence in engineering education through continuously improving its program, to add to the body of knowledge through research, to provide an environment for professional development, and to serve the profession.

In order for the faculty to be able to impart to the students the latest and the most recent advances in their respective fields of endeavor, each faculty member should be involved in scholarly activities that enhance the level of expertise and maintains the individual's technical and professional expertise.

### **III. Criteria for Tenure**

The Swenson College of Science and Engineering endorses the following standards and indices as clarification of the qualities that the College deems prerequisite to tenure, consistent with Appendix 1: Section 7.11. Because excellence in teaching, in research, and in service is the major goal in the College, the following document concentrates on these three areas.

Ideally, a candidate will demonstrate distinction in all three areas - teaching, research, and service. The Department of Chemical Engineering places the highest priority on effective teaching. Effectiveness in research, while emphasized, must take the undergraduate mission of the Department into consideration. Demonstrated teaching and research effectiveness will be given primary emphasis. Effective service alone cannot qualify the candidate for tenure.

## **A. Teaching**

Documentation of teaching ability requires diligence because evidence used to support claims of teaching performance can be interpreted variously.

### Criteria

With regard to the criterion of teaching, an individual's teaching ability supports tenure and promotion when it exhibits such qualities as these:

1. Mastery of the subject areas usually assigned.
2. Demonstrated superior ability to speak clearly and to understand students' comments and questions.
3. Intellectual challenge, which exacts from students the high scholastic performance appropriate to a university.
4. Demonstrated conscientious course planning.
5. Demonstrated adroit facilitation of group learning processes.
6. Determination of grades through competent and fair measurements of students' achievement.
7. Individual and cooperative effort in the development of new courses or the redesign of existing courses to respond to changing knowledge and changing student needs.
8. Demonstrated ability and aptitude to undertake diverse teaching and advising tasks.
9. Demonstrated effective advising that helps student set academic and career goals and provides information on educational options, policies, procedures, and resources.
10. Empathy with students and understanding of their scholastic needs.
11. Demonstrated willingness to communicate to students their degree of progress.

### Evidence

A department head assembling materials defining a candidate's teaching ability should consider a wide range of measures of teaching effectiveness. The following list of questions is intended to serve only as an example.

1. What has been the workload with regard to number of courses, students, advisees?
2. Beyond the evidence of numbers, how difficult were the individual's teaching subjects?

3. What level of teaching or advising ability is indicated by student (interviews, surveys) and peer (classroom visitations; review of syllabi, including text, material covered, assignments, examinations) evaluations?
4. What level of teaching or advising ability is evidenced by the subsequent performance of graduates or by the comments of graduates?
5. Did the individual significantly improve existing courses or develop valuable new ones?
6. Has the individual been active in improving the general quality of teaching or advising in the department or campus?
7. Does any research or professional activity by the candidate demonstrate commitment to high quality teaching or advising?
8. Has the individual won or been nominated for any teaching or advising awards?
9. Does the instruction reflect scholarly activity?
10. Where the opportunity exists, has the individual contributed significantly to a graduate program?
11. Has the individual made research opportunities available to undergraduates?
12. Has the individual participated in effective interdisciplinary or international teaching activities?
13. Does the individual incorporate meaningful public engagement into effective teaching?
14. Has the individual been effective and efficient in laboratory courses, including the supervision of teaching assistants?

## **B. Research**

Admission to the College faculty and advancement within its ranks depends on the serious commitment to and participation in scholarly enterprise. However, some allowance by reviewers must be made for variation in expectations of scholarship and creative production within the College. The Department of Chemical Engineering makes allowances that recognize the undergraduate teaching mission of the Department and the limited access to research assistants and graduate students.

Seeking mastery of one's field and sharing one's knowledge with other members of the academic community-colleagues and students-constitute the essence of scholarly and creative work. Original contributions to the knowledge and interpretation of one's own field are the most focused and enduring products of one's scholarship and creative achievement.

### Criteria

The Department of Chemical engineering uses the following criteria for evaluating both emerging and traditional evidences for scholarship:

1. Clear Goals

- Are research objectives clearly defined?
  - Are defined objectives realistic and achievable?
  - Does the scholar identify important questions in the field?
2. Adequate Preparation
- Does the scholar show an understanding of existing scholarship in the field?
  - Does the scholar have the necessary skills to perform his or her work?
  - Does the scholar bring together the resources necessary to move the project forward?
3. Appropriate Methods
- Are the research methods appropriate to the goals?
  - Are research methods effectively applied?
  - Are research methods updated in response to changing circumstances?
4. Significant Results
- Are research goals achieved?
  - Has the work been critically evaluated by a qualified group of peers?
  - Does the scholarship add consequentially to the field?
  - Does the scholarship lead to additional areas for further exploration?
  - Has the work led to further research and collaborative opportunities?
5. Effective Presentation (both written and oral)
- Does the scholar use a suitable style and effective organization to present his or her work?
  - Are appropriate forums used for communicating work to its intended audiences?
  - Are presentations delivered with clarity and integrity?

### Evidence

It is expected that results of scholarly activities will include publication in professional journals, government documents and reports, or other publicly available informational outlets, which are either internally, or externally, or both refereed or reviewed. It is also expected that faculty members present their scholarly activities at regional, national, or international meetings of professional societies and technical organizations.

Peer reviewed scholarship is required. Additional evidence of scholarly work may include:

1. Activities such as editing, reviewing manuscripts for established journals and presses, translating scholarly or creative work for publication.

2. Participating as invited speaker, speaker or chairperson of a program or session in the meetings of professional organizations.
3. Effective participation in interdisciplinary or international research collaborations or engagement of public entities in research activities.
4. Consulting for private industry or government entities that involves substantial scholarly research, especially if expressed in an evaluated report or publication.
5. Product or process development or design, including new technologies, algorithms, computer applications, laboratory or analytical procedures, etc.
6. Patents resulting from research activities.
7. Unpublished manuscripts or reports either refereed or accompanied by competent evaluation.
8. External research funding from sources outside the University by competition at a regional or national level. Efforts to obtain extramural grant support will be given important consideration in tenure decisions.
9. Research funding from internally competitive grants.
10. Establishment of a research program with promise for achieving promotion to professor.
11. Mentoring undergraduate and graduate students in independent studies, UROP projects, and scholarly research.
12. Other activities may be considered as evidence of scholarly work, such as web sites, blogs, software tools, electronic portfolios, and video documentaries: however it is essential that these activities include documentation of peer review. Peer review in competitive public forums is an essential criterion for evaluating scholarship, regardless of form. Devising a workable system or metric for documenting and evaluating such scholarship activities is still an unfinished project and challenge that must be addressed before these newer forms of scholarship are used to support a case for tenure or promotion.

### **C. Service**

Service of unusual distinction will be considered in evaluating applications for tenure. However, effectiveness in service alone will not qualify the candidate for tenure. It is important that the documentation of service in a faculty member's file be very explicit, and departments should regularly make an effort to secure information about the quality of service outside the department.

#### Criteria

The College recognizes that successful functioning of the University depends on faculty participation and leadership. Faculty members are expected to participate in the work of committees and similar agencies and in the management functions in their departments. In addition, public engagement and community service that is reasonably related to the professional role of a faculty member can be an aspect of faculty activity.

## Evidence

Discipline-related service includes participation in the ongoing professional activities of one's discipline. This activity is perceived as evidence of professional commitment and often of standing within the profession. Attendance and participation in professional meetings are expected. Holding an official position within a professional society such as an officer, or program or section chair is recognized as significant service and is encouraged.

### **IV. Promotion**

#### **A. To Assistant Professor**

A faculty member lacking the terminal degree initially will be appointed at the rank of instructor. However, upon completion of the Ph.D. the rank of assistant professor can be conferred. This promotion does not involve tenure.

#### **B. To Associate Professor**

If the tenure criteria described earlier are met, promotion to associate professor is warranted. Except in rare cases, promotion to the associate professor rank is associated with a positive decision concerning tenure. For a probationary assistant professor, there shall be one vote on tenure and one vote on promotion to associate professor.

#### **C. To Professor**

For promotion to professor, evidence is sought for distinction and academic integrity in teaching, scholarship, and service; this is beyond the level described in section *III Criteria for Tenure*, and is consistent with *Appendix 2: Section 9.2*. Primary emphasis is placed on demonstrated teaching effectiveness followed by a scholarly achievement. The heavier teaching load, necessarily required by our primarily undergraduate program, is recognized in the assessment of the evidence. Service alone cannot qualify the candidate for promotion. In addition, the candidate must demonstrate that a significant contribution has been made to maintain and enhance the Department's regional, national, or international reputation in quality of instructional programs, scholarship, and professional service.

The Department of Chemical Engineering recognizes the advantage and privilege that tenure bestows. New lines of research and expertise, in addition to those demonstrated at the tenure track level, may be developed in the absence of that pressure to exhibit research productivity constantly, which is expected while on the tenure track. Similarly, this aspect of tenure provides flexibility within which teaching innovations, that would have been prohibitively time consuming for the candidate while on the tenure track, can be developed. The candidate's recognition of this aspect of tenure with clear evidence in either research or teaching, or both, will contribute significantly in the assessment of the candidate's level of distinction.

### **V. Procedures**

The Department complies with the procedures for promotion and conferral of indefinite tenure set forth in Section 201.000 of the *Collective Bargaining Agreement between the Regents of the*

*University of Minnesota and the University Education Association* that is in effect at the time of the promotion and tenure review and decision.

## **Appendix 1**

**Section 7.11 General Criteria (for tenure).** 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 [2]. This determination is reached through a qualitative evaluation of the candidate's record of scholarly research or other creative work, teaching, and service [3]. The relative importance of these criteria may vary in different academic units, but each of the criteria must be considered in every decision [4]. 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.

[2] "**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.

[3] "**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.

[4] 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.

## Appendix 2

**Section 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 [7]. This determination is reached through a qualitative evaluation of the candidate's record of scholarly research or other creative work, teaching, and service. 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.

[7] "**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.

### References

1. Board of Regents Policy on Faculty Tenure (June 10, 2011)
2. Tenure Code Application to UEA Contracts
3. Collective Bargaining Agreement between the Regents of the University of Minnesota and the University Education Association