Aerospace Engineering and Mechanics, 
Institute of Technology

7.12 Criteria for promotion and tenure

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 the 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 the 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 Professor according to the 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 Mission Statement

The mission of the Department of Aerospace Engineering and Mechanics comprises three objectives in the areas of aerospace engineering and mechanics: the education of students and professionals at all levels through a dedication to effective teaching; the pursuit and dissemination of new knowledge through original and creative research; and the
advancement and application of scientific and technical knowledge and expertise 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 criteria described here (Section IV), the Procedures for Reviewing Candidates for Tenure and/or Promotion: Tenure-Track and Tenured Faculty and the academic unit’s 7.12 statement.

Mentoring plays an important role in the success of probationary faculty members. The Department Head will assign a faculty mentor to each probationary faculty member in consultation with the probationary faculty member and the tenured faculty. The mentor will in most cases be a senior faculty member in a similar research area as the probationary faculty member. It is expected that the mentoring relationship will last throughout the probationary period; however the Department Head may reassign mentors on the advice or suggestion of the mentor, the probationary faculty member or the tenured faculty. The mentor will be available to advise the candidate on teaching and research. The mentor will also be available to counsel the candidate on preparation of his/her annual review package.

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 for Reviewing Candidates for Tenure and/or Promotion: Tenure-Track and Tenured Faculty. 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 personal injury or illness on the part of the candidate. The criteria for the evaluation 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 should not be a factor in the evaluation.

A department may also recommend termination of a candidate's appointment at any time in accordance with Section 10 of the “Procedures for Reviewing the Performance of Probationary Faculty.

Each year the probationary faculty member will assemble a package to submit to the tenured faculty for review. This package will include the most recent curriculum vitae (CV), copies of all papers published in the past year (electronic versions), copies of all active manuscripts listed on the CV, teaching evaluations and other documentation of teaching such as course syllabi, peer review, etc. The package will be reviewed by the faculty mentor and submitted to the Department Head who will present it to the tenured faculty in a yearly review meeting. The tenured faculty will examine the package and make recommendations to the Department Head to include in the formal probationary review. The Department Head will discuss these recommendations in his/her annual
meeting with the probationary faculty member. The recommendations and this discussion will be the basis for the annual President’s Form 12 for the review of probationary faculty.

Under ordinary circumstances, the tenured faculty does not vote on continuation of probationary faculty members. However, if it is established during the annual review process that there are problems which, if not corrected, are likely to result in eventual denial of tenure, a vote on whether or not to continue will be taken at the next annual review. In this case the probationary faculty member will be informed in writing of (1) the details of the problems identified, (2) what must be done to correct these problems, and (3) the fact that a vote on continuation will be taken at the next annual review. If the result of this vote is a decision not to continue, the probationary faculty member will be terminated in accordance with University of Minnesota procedures. A vote to continue does not guarantee that at the end of the probationary term the tenured faculty will vote positively for indefinite tenure.

Faculty working in interdisciplinary fields will be assessed by the same procedures as all other faculty. While interdisciplinary work is encouraged, this work must be relevant to the fields of aerospace engineering or mechanics. For faculty working in interdisciplinary areas, both the quality of the work as described in Section IV of these guidelines and the appropriateness of the work in fulfilling the mission of the Department to provide excellence in teaching and research in the fields of aerospace engineering or mechanics will be considered. In such cases, the Department may decide to ask for letters and/or oral evaluations from internationally recognized experts in the candidate’s area of research. Generally, this will be done in the candidate’s third probationary year and will not be done every year. The decision to ask for external comments will be discussed with the candidate before his/her annual meeting with the Department Head, and the comments will be shared with the probationary faculty member at that annual meeting. The candidate will have opportunity at that meeting to respond to the comments.

**IV. Conferral of Indefinite Tenure**

Section 7.11 of Faculty Tenure specifies the 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 [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 Aerospace Engineering and Mechanics a faculty member must demonstrate effectiveness in teaching and must establish a record of excellence and creativity in scholarly research and its dissemination in the broad areas of aerospace engineering or mechanics. These are the primary criteria, and the fulfillment of both is a minimum requirement for the awarding of indefinite
tenure. Neither extraordinary distinction in teaching, nor excellence in research, are sufficient by themselves for the granting of indefinite tenure. A faculty member may choose to participate in service to the profession and in other governance and service activities. These contributions, however, are secondary to the teaching and research components in evaluations leading to decisions related to the granting of tenure. An outstanding record in the service component is not, by itself, sufficient to form the basis for a recommendation to 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 do not have an extension of the probationary period. Extension of the probationary period in accordance with Section 5.5 should not be a factor in the tenure decision. 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 which 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 in the satisfactory range as defined by the department norms for those courses;
- written evaluations by peers based on classroom visits and review of course materials;
- development of new courses and/or laboratories or substantial modifications of existing courses and/or laboratories;
- supervision of undergraduate research projects;
- advising of undergraduate and professional student organizations;
- development of instructional materials;
- publication of textbooks;
- local and national awards for teaching;
- participation in teaching improvement programs and an upward trajectory in student evaluations;
- overall curriculum planning and development;
- substantial participation in accreditation activities;
• leadership or contributions in development of new interdisciplinary courses or teaching methods that enhance or expand the core disciplines of aerospace engineering or mechanics.

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 or substantial modifications of existing 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 professional discipline in the area of aerospace engineering or mechanics 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. Generally the Department requests a minimum of eight external letters. The Procedures for Reviewing the Performance of Probationary Faculty require that: The department should seek appraisals both from persons suggested by the candidate and from other recognized scholars in the field. Further, at least half the letters, and no fewer than four, must be obtained from people with no professional or personal interest in the advancement of the candidate’s career (for example, they should not be former advisors, mentors, co-authors or co-investigators on previous work). 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.
• for candidates whose research contains a strong interdisciplinary component, letters of evaluation from internal and external reviewers whose research also crosses similar interdisciplinary boundaries.
• for candidates with substantial research collaborations, letters from collaborators that evaluate the significance of the candidate’s individual contributions
the candidate's publications in the form of articles in peer reviewed research journals, research monographs, abstracts, conference preprints, conference proceedings, and other professional publications.

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

- external funding acquired to support and maintain the candidate’s research program. The pursuit of funding is necessary to the development and maintenance of an active research program. This includes supporting the salary and fringe benefits of graduate students and/or postdoctoral appointees, purchasing equipment, paying for materials and supplies, and other routine expenses associated with operating a competitive 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 among 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 will be asked to share the proposal reviews with his or her mentor and the Department Head.

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 aerospace engineering or mechanics, and that it is a measure of the candidate's potential to make continuing contributions in pure and/or applied research.

Other qualifications that the candidate may have acquired, and that may be used to establish the candidate's research ability include, but are not limited to, the following examples:

- election to prestigious national organizations that recognize excellence.
- research awards and honors granted by professional societies, government agencies, industry and universities.
- patents, inventions, technology transfer, and other such developments of a significant scientific or engineering nature.
- publication of scholarly review articles and research monographs.

C. Service

In some units, 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 in the Department of Aerospace Engineering and Mechanics.

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

- 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.
• review of technical and scientific papers for peer-reviewed journals and conference presentations.
• review of research proposals for funding agencies.

Participation in the governance of the institution and other services to the University and the Department of Aerospace Engineering and Mechanics is expected for all Aerospace Engineering and Mechanics 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. Service to the larger public community is also encouraged, 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 Aerospace Engineering and Mechanics 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 Aerospace Engineering and Mechanics, 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 (expectations for promotion to Professor are defined below). It is the responsibility of the Department Head to advise the Associate Professors on their progress. Associate Professors will be mentored by a senior Professor who will act as a colleague advising them on achieving greater professional visibility, participating in professional meetings and committees, and writing grant applications.

A candidate for promotion to the rank of Professor must have achieved national and international prominence through research contributions to aerospace engineering or mechanics that are distinguished by substance, quality and creativity, and through consistently high standards in teaching. Such prominence is evidenced, for example, by publications in leading journals and invitations to national and international conferences,
Universities and Research Centers. Service to the profession, participation in the governance of the institution, and other services to the department, college, and University, may be taken into consideration, 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 which indicates that the candidate is among the leaders in their field in aerospace engineering or mechanics, 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.
- the effective advising of post-doctoral personnel in disciplines where this is appropriate.

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.
- 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 will parallel those used in granting tenure taking into account the different stages of professional development and will provide for flexibility. Tenured faculty in the Department of Aerospace Engineering and Mechanics are expected to maintain an active research program, teach courses as required by the Department in a satisfactory manner, advise students, and serve the goals of their unit and college. They are also expected to support their research activities and to publish and present their research results when appropriate. The fraction of an individual's effort that is devoted to each of these activities varies among the faculty, and for an individual may vary from term to term and year to year. The expectations for faculty members are described in detail in the AEM Faculty Work Load Policy and each faculty member is governed by this policy.

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. If the annual review
process determines that faculty performance does not meet the minimal standards
determined by the department, then the faculty member will be so advised in writing
with recommendations for improved performance and a time period to demonstrate
improvement. If the faculty member’s performance continues to be below expectations
then the procedures described in 7a.3 of Faculty Tenure will be followed.

The Department of Aerospace Engineering and Mechanics shall have a Post Tenure
Review Committee of three Professors elected by the faculty. If during the course of the
annual review process, both the Department chairman and the elected Post Tenure
Review Committee find a faculty member’s performance to be substantially below the
goals and expectations of the Department, they must send a letter or memorandum to the
faculty member, stating that finding. The letter must be signed by both the Department
chairman and by all the 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. Both the Department chairman and the Committee
should work with the faculty member to improve performance during that time. Efforts
must be made at this point in the process to assist the faculty member in remedying
perceived deficiencies.

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.

Each year probationary faculty members and faculty members considered for promotion
will assemble a package for review. This package will include the most recent CV,
copies of all papers published in the past year (electronic versions), copies of all active
manuscripts listed on the CV, teaching evaluations and other documentation of teaching
such as course syllabi, peer and student evaluations, etc. The package will be reviewed
by the faculty mentor. The Department Head will present the package to either the
tenured faculty in the case of a probationary faculty or to the Professors when Associate
Professors are being considered for promotion in a yearly review meeting. The
appropriate faculty groups (tenured faculty or Professors) will examine the package and
make recommendations to the Department Head to include in the formal review.

VIIa. Aerospace Engineering and Mechanics Voting Procedures

The Voting Rule for Promotion and Tenure in the Department of Aerospace Engineering
and Mechanics requires a positive vote by two-thirds of the faculty eligible to vote in all
promotion and tenure cases. The new majority requirement applies to all faculty members
whose initial appointment begins on or after September 16, 1992.