Expectations for Faculty Development in Engineering Technology

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Abstract

There is probably nothing more important to a new faculty member than to find out what is expected to achieve promotion and tenure. In many institutions, however, what is expected to achieve these goals is vague and unclear. This article lays out ways an institution can make it clear to a new faculty member what needs to be done to have a good chance to achieve promotion and tenure through a realistic plan of faculty development.

Introduction

It can be safely said that when a new faculty member arrives on campus, he or she wants to do a good job. Most new faculty members are entering into an entirely new work environment. This is especially true of new faculty members in engineering technology, who typically enter academia from an industrial environment. It is difficult to know what is expected. Although it is obvious that one must do a good job in the preparation and teaching of classes, what is necessary beyond that to succeed in academia is usually not apparent to new faculty.

Most institutions set standards in teaching, research, and service for the achievement of promotion and tenure. A typical statement is that one must achieve excellence in one of these areas and be satisfactory in the other two. Although never explicitly stated, service is almost always the weak link in this academic troika. The author is not aware of any case in which a faculty member has achieved promotion and tenure by being excellent in service, but only satisfactory in teaching and research. As to the other two, in research institutions, excellence is usually required in the research area. However, in engineering technology where teaching is emphasized, the teaching area can be used for the area of excellence. Also, research is usually defined as scholarship or creative activity for engineering technology faculty members. Even if these expectations are made clear, it is usually not stated what is necessary for "excellence" or being "satisfactory."

The author is fond of a statement made by one of his instructors in a course he was taking for his doctorate. The professor stated that tenure was like a bowling game in which the pins are hidden. Although this is humorous, it is not much help to a new faculty member. What is needed is a realistic plan of faculty development to achieve excellence or a satisfactory level in the areas of teaching, scholarship, and service. This article endeavors to lay out such a plan with particular relevance to engineering technology faculty.

Outlining A Plan

While conducting a survey of baccalaureate engineering technology programs accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC of ABET), the author compiled a small library of promotion and tenure handbooks from some of the leading engineering technology institutions in the United States.[1] In the author's opinion, one of the best, and in fact used as a model for many other institutions, is the faculty handbook for promotion and tenure used by Purdue University at West Lafayette.[2] In addition to the handbook, the School of Technology at Purdue also has a handout for faculty expectations. This will be used as a guide in the discussion that follows on goals to achieve excellence or a satisfactory level of competence in the areas of teaching, scholarship and service in preparation for going up for promotion and tenure.

Teaching

Since teaching is the most important area for an engineering technology faculty member, any school that has engineering technology should establish a teaching culture. In this environment, excellence in teaching delivery in the classroom and laboratory should be expected as the sine qua non. In addition, a method to continually assess student learning, in addition to the normal grading system, should be established. There should also be a method for ongoing curriculum and laboratory development in all courses, so as to maintain the state of the art in the relevant technical field..

For the individual faculty member, teaching expectations should start with course and instructor evaluations in all courses. In this way, the instructor will get constant feedback for teaching improvement. The faculty member should then maintain an ongoing record of professional development directed towards improving technical competencies, and improving the art and science of teaching in his or her discipline. This should include striving for new and innovative ways to present material.[3] For the institution, this should include the encouragement of publication of quality teaching materials such as textbooks, tutorials [4], lab manuals [5], and software. Instructors should also be available for consultation by their students at regularly scheduled office hours. This should include letting the students know how they are doing in their courses.[6] Innovative ways of testing should also be encouraged.[7]

Scholarship

Although teaching is the most important area for engineering technology faculty, it is important for a school of engineering technology to establish a scholarship culture. It is not enough to say that engineering technology is different and therefore scholarship is unnecessary. Not only will this not carry any weight with university promotion and tenure committees, but creative activity is necessary for faculty to stay current in their field. Therefore a school or department of engineering technology should encourage scholarship through the publication of quality articles. In engineering technology, papers of a pedagogical nature are quite appropriate.[8] Also, senior faculty members in the department should be encouraged to mentor junior faculty in their

scholarship endeavors including co-authored papers. In addition, scholarship through application-oriented projects with business and industry should be encouraged.[9]

As to the actual publication expectations, it should be emphasized to new faculty members, that full citation of authorship and credit is expected. Publication in the appropriate media for the field is also expected. For engineering technology faculty, one of the most prestigious publications is the *Journal of Engineering Technology* (JET). However, since only about a dozen articles are published in this journal annually, it is obvious that all engineering technology faculty going up for promotion and tenure will not be able to get published in JET. Since the American Society for Engineering Education (ASEE) deals with the promotion of teaching in engineering and engineering technology, its refereed conference proceedings at both the national and section level are also a quite appropriate venue for publication. ASEE has other refereed journals as well, such as the *Computers in Education Journal*, in which appropriate articles can be published.[10]

Service

Although not rated as important as teaching and scholarship in the academic troika, service should not be overlooked. Underpinning this area is the active participation of faculty in the planning, operations, and management of the engineering technology department. It might be said that this is the expected dues that one pays to be a part of the academy. This includes being collegial with faculty and staff at all levels on campus.

As to specific service requirements, service to the department and school is expected. This includes committee assignments, promoting the image of the college at all levels, and being accessible to students. One is expected to volunteer for tasks instead of waiting to be asked. A junior faculty member must be somewhat cautious in this regard, however, since service is the least important of the three areas in academia. A junior faculty member needs to be careful not to get overburdened in this area. Some judgment is necessary to determine an appropriate level of involvement. An experienced department chair should be able to give good advice in this regard. Faculty involvement with local and national professional organizations is important. ASEE in probably the best organization to be active in. Activity in one's discipline specific professional organization is also encouraged. Lastly, external outreach in the form of consulting, recruiting [11], supporting K-12 educational initiatives such as science fairs [12], accreditation [13], and development [14] is highly encouraged.

A Departmental Guideline

To counter the "bowling game with hidden pins" story mentioned earlier, it is a very good idea if a junior faculty member's department provides some mentoring for the faculty member. One of the best examples that the author has found of this is a three year plan that the Electrical Engineering Technology (EET) Department at Purdue University at West Lafayette has put together. A handout entitled, "Expectations of new faculty for first three years of probationary period," is given the faculty member when he or she is hired. Although it is emphasized that the

individual is responsible for his or her own activities and achievements in the promotion process, and is also responsible for preparation of his or her own promotion document, the EET primary Committee feels that it is important for all new faculty to get off to a good start to achieve success in the promotion and tenure process.

To aid in this process, the handout outlines activities in each of the first three years that are important on the way to promotion and tenure. For example, during the first year it is recommended that the faculty member become familiar with the promotion process and start documentation by reviewing sample documents, study the promotion handbook, and set up a promotion document file. Engaging in activities that will lead to excellent teaching is paramount. ASEE is an excellent venue for this. Collegiality with colleagues is stressed along with participation in campus and professional activities. Publication and grant activities are also encouraged.

During the second and third years, the faculty member is encouraged to work with the department head and full professors to develop and refine a plan for the promotion process through the penultimate year and continue to work on a promotion document. The plan should be submitted to the department head annually. Activities mentioned above should be continued and improved upon. Development in the teaching area is emphasized. The end result of this process is that surprises are eliminated and the faculty member develops in a way that is satisfying to the senior faculty members who will be voting on the junior faculty member's tenure.

Conclusion

If a faculty member and his or her department follow the suggestions as outlined in this paper, nasty surprises on the way to promotion and tenure can be eliminated, or certainly minimized. The important thing is to learn what is expected as soon as possible in the tenure and promotion process. A good faculty development plan goes a long way towards "unhiding the pins."

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