Section III: SUMMARY OF CRITERIA FOR PROMOTION AND TENURE
COLLEGE OF ENGINEERING AND MINES

(Based on Revised Policies for Promotion & Tenure Decisions approved by CoEM faculty 3-21-94)

Candidates for tenure must also meet criteria for the rank

CoEM criteria includes an introduction and 2 sections covering appointment, promotion & tenure decisions by rank & role.

General: The academic goals of the College faculty are excellence in teaching and in engineering research as well as in public service and professional practice. Scholarly accomplishment over a period of years in the broader range of these faculty goals is required for progress towards promotion and tenure. However, concentration of effort in teaching <u>or</u> in research is permissible, and say he encouraged in some departments. It is recognized that superior performance in meeting the goals of the College may be accomplished by a faculty which includes some members with backgrounds other than engineering. These criteria shall apply to those faculty members, but shall be modified as necessary to take into account the background of the candidate and their academic assignments within the College.

1. Criteria by Rank: A faculty member under consideration for promotion or tenure must give evidence of excellence in scholarly teaching and in scholarly research, with superior performance in at least one of these areas. Competence in professional practice and service is expected of all.

1.1 Associate Professor: Promotion to associate professor with tenure requires that the candidate has offered tangible evidence of creative and significant scholarship as shown in part by the evaluation, both within and outside the University, of his or her publications. The faculty candidate must also demonstrate he or she is an effective teacher, well prepared in his or her given field, with the ability to motivate students, to communicate knowledge and to sustain a first-rate scholarly program.

1.2 Professor: Promotion to professor is a recognition that the candidate is regarded as an excellent scholar in his/her field. Solicited letters from recognized scholars and researchers outside the University in the candidate's field of specialization will weigh heavily in the evaluation of stature. Excellence in teaching should be considered of equal importance as excellence in research. Each full professor should contribute to teaching, research and service and show outstanding contribution in at least two of these.

2. Criteria by Role: The College requires for each of these promotion and tenure decisions, documentation of the candidate's excellence in scholarly teaching combined with good performance in research or of excellence in research combined with good performance in scholarly teaching. Excellence in service combined with good performance in reaching and research is not sufficient to insure promotion or tenure.

2.1 Scholarly Teaching: Mastery of subject matter and dedication to the needs of students are central to excellence in teaching. The term teaching includes classroom instruction as well as individual student guidance at both the undergraduate and graduate levels. The guidance of individual under-graduate and graduate students is an integral part of every faculty member's teaching duties. Measures of effectiveness in individual guidance include the number of students who consciously seek out the candidate as their advisor, and the number of high-quality reports, papers, theses and dissertations directed by the candidate.

2.2 Scholarly Research: The most important measure of research activity is presentation of the candidate's research results in peer-reviewed publications. Articles in high quality peer-reviewed publications (such as journals, conference proceedings, scholarly books, etc.) will count more heavily in the evaluation than other publication means, such as non-peer-reviewed symposium/workshop proceedings, technical reports which are not peer-reviewed, or other lesser quality publications. A high level of research competency is required to secure such grant on a competitive basis over extended periods of time, and such awards imply high quality work. The stature, credibility and reputation of the candidate must be documented by letters from recognized scholars and researchers in the candidate's field.

2-3 Service: The candidate's specific professional accomplishments shall be noted, such as, professional registration, consulting achievements, patents, acknowledgements, and citations. Such accomplishments are important indicators of professional competence, especially when they lead to national or international recognition. Service to the University will include membership, and active participation in, various departmental, college and University-wide committees. Special efforts to host at the University prestigious national and international technical meetings will also be considered service to the University.

POLICIES FOR FACULTY PROMOTION AND TENURE DECISIONS
IN THE COLLEGE OF ENGINEERING

Purpose and Scope

The purpose of this document is to record the policies of the faculty of the College of Engineering and Mines regarding promotion and tenure evaluations and decisions. The criteria developed, while directed toward evaluation of current faculty, should be considered also in faculty search committee evaluations for initial appointments.

The roles of the College faculty are teaching, research and service, including professional practice. While clearly each member of the academic faculty and professional group serving the College will not be equally engaged or proficient in every role, all are representative of the Engineering profession. Thus the faculty of the College of Engineering places special emphasis on stature within the profession.

"Engineering is the profession in which a knowledge of the mathematical and natural sciences gained by study, experience, and practice is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind." *

* (Definition of Engineering as given by the Accreditation Board for Engineering and Technology.)

The academic goals of the College faculty are excellence in teaching and in engineering research as well as in public service and professional practice. Scholarly accomplishment over a period of years in the broader range of these faculty goals is required for progress towards promotion and tenure. However, concentration of effort in teaching or in research is permissible, and may be encouraged in some departments. Annual performance evaluations are to be taken into account as part of the promotion and tenure process. Such evaluations alone are, however, not sufficient for decisions on promotion and tenure issues, the criteria for which are the central purpose of this document.

Each faculty member of the College, including members on leave of absence, should receive a copy of these procedures. Each new faculty member entering service in the College should receive a copy at the time he or she begins service.

The following criteria for promotion or tenure are considered general guidelines for the College. In addition, each Department in the College will develop specific promotion and tenure guidelines for its faculty evaluation decisions, which take into consideration the pertinent field of the candidates from that department and the needs of the department in overall faculty competence. Each Department shall have a Faculty Status Committee consisting of faculty members eligible to make peer evaluation decisions as required by The Board of Regents Conditions of Faculty Service for annual faculty reappointment decisions and for promotion and tenure decisions.

In departmental committee deliberations, faculty policies and recommendations must be explicit and consistent, compromise procedures are strongly discouraged, and the number of yeas and nays must be recorded and reported. Summaries of the reasons for these votes must be added

to the documentation forwarded to the reviewing bodies, while maintaining the confidentiality of the votes of individual committee members. A copy of the summary will be made available to the candidate on request.

It is recognized that superior performance in meeting the goals of the College may be accomplished by a faculty which includes some members with backgrounds other than engineering. These criteria shall apply to those faculty members, but shall be modified as necessary to take into account the background of the candidate and their academic assignments within the College.

1. Appointment, Promotion and Tenure Decisions by Rank

A faculty member of The College of Engineering under consideration for promotion or tenure must give evidence of excellence in scholarly teaching and in scholarly research, with superior performance in at least one of these areas. Competence in professional practice and service is expected of all. Only those persons should be considered for promotion who are now contributing and, in the future, will continue to contribute to the stature of the University of Arizona. All promotions will follow the procedures and reviews established by the *University Handbook for Appointed Personnel.*

1.1 Promotion to Associate Professor with Tenure

Promotion to associate professor with tenure requires that the candidate has offered tangible evidence of creative and significant scholarship as shown in part by the evaluation, both within an outside the University, of his or her publications. The faculty candidate must also demonstrate he or she is an effective teacher, well prepared in his or her given field, with the ability to motivate students, to communicate knowledge and to sustain a first rate scholarly program. The promotion recommendation must indicate the faculty member's potential for further growth and expectations that the candidate will mature as a senior scholar. Normally this expectation must be that the candidate is potentially promotable to professor.

The granting of tenure to a faculty member already at the associate professor level will follow the same criteria and will require the same evidence as promotion to associate with tenure.

1.2 Promotion to Professor

Promotion to professor is recognition that the candidate is regarded as an excellent scholar in his/her field. Solicited letters from recognized scholars and researchers outside the University in the candidate's field of specialization will weigh heavily in the evaluation of stature. Excellence in teaching should be considered of equal importance as excellence in research. Each full professor should contribute to teaching, research and service and show outstanding contribution in at least two of these. Deans must review associate professors with five years in this rank and an associate professor not promoted to professor should be reviewed within each subsequent five years.

The granting of tenure to a faculty member already at the full professor level will follow the same criteria and will require the same evidence as promotion from associate to full professor.

2. Appointment, Promotion and Tenure Criteria by Role

   Each faculty member eligible for further promotion or tenure shall have the right to know in advance the standards and performance necessary for him or her to be recommended for promotion or tenure at each level of evaluation; i.e., at the points of department, department head, college, dean, and university committee. At the time of any changes in faculty evaluation standards or changes in administration, tenure-eligible as well as tenured faculty must be fully informed of the interpretations and evaluation criteria which will be followed to recommend promotion and tenure.

   Each tenure-eligible faculty member who is not a full professor with tenure shall maintain, in his or her departmental dossier, material relevant to further promotion and tenure. Material shall be added to this dossier at the request of the faculty member, the department head, or the Department Faculty Status Committee. The faculty member shall have the right and responsibility to review the material in the dossier, in order that it will be a complete summary of his or her performance for the purpose of promotion and tenure evaluation decisions. Confidential evaluations and correspondence shall be kept in a separate file. The Department Faculty Status Committee, in determining whether faculty members in the department shall be proposed for promotion or tenure, shall review each dossier and evaluation file as appropriate in its decisions.

   The College requires for each of these promotion and tenure decisions, documentation of the candidate's excellence in scholarly teaching combined with good performance in research or of excellence in research combined with good performance in scholarly teaching. Excellence in service combined with good performance in teaching and research is not sufficient to insure promotion or tenure. IN this decision process, the Faculty Status Committee must read and evaluate the candidate's work and seek the confirmation of those outside the University that in at least one of these two major areas he or she has made excellent contributions in the field of specialization.

   2.1 Evidence of Scholarly Teaching

   Mastery of subject matter and dedication to the needs of students are central to excellence in teaching. The term teaching includes classroom instruction as well as individual student guidance at both the undergraduate and graduate levels. The process of committee review must evaluate the quality of teaching, as evidenced by documentation collected by the candidate and by the departmental Faculty Status Committee.

   Student evaluations of classroom teaching, collected according to campus procedures, can provide evidence of quality of classroom teaching if evaluation data are provided for all applicable courses and are compared with relevant peer group data.

   The letters from former students may provide evidence of quality in teaching and advising. The solicitation of such letters should be done by the departmental committee from persons outside the university pursuing a relevant professional career or advanced study. These may include alumni of other institutions where the candidate has taught, if relevant.

   Peer evaluations by senior colleagues of classroom performance and teaching materials, including lecture notes, handouts and examinations, can provide evidence of excellence in classroom teaching and of curriculum development activities.

The guidance of individual undergraduate and graduate students is an integral part of every faculty member's teaching duties. Measures of effectiveness in individual guidance include the number of students who consciously seek out the candidate as their advisor, and the number of high-quality reports, papers, these and dissertations directed by the candidate.

2.2 Evidence of Scholarly Research

Research, whether basic or applied, cannot contribute to general scientific knowledge unless properly communicated to the scientific community and is subject to its reviews. The most important measure of research activity is presentation of the candidate's research results in peer-reviewed publications. The peer review process provides the clearest evidence that the candidate's contributions are recognized by his/her peers and provides a means whereby his/her stature can be compared with that of colleagues nationally. Articles in high-quality peer-reviewed publications (such as journals, conference proceedings, scholarly books, etc.) will count more heavily in the evaluation than other publication means, such as non-peer-reviewed symposium/workshop proceedings, technical reports which are not peer-reviewed, or other lesser quality publications.

Additional measures of research activity are awards and citations; attainment of higher grades of membership in professional societies; participation in workshops and symposia; invitations to lecture, to participate in panel discussions, to chair sessions at professional meetings and other research institutions, to edit research volumes, to review scientific journals, and to serve on professional advisory committees, review panels or external degree examination committees.

Research grants help to maintain a high level of research activity in the College and contribute to the expansion of facilities and the support of graduate students. A high level of research competency is required to secure such grants on a competitive basis over extended periods of time, and such awards imply high quality work. In all cases high quality research is preferred to activity that does not lead to significant research results, regardless of funding level.

The stature, credibility and reputation of the candidate must be documented by letters from recognized scholars and researchers in the candidate's field. These letters shall be solicited by the departmental committee from persons of distinction to review the candidate's work, comparing it specifically with that of other individuals in the field. These external evaluations are an important component of the overall evaluation process.

2.3 Evidence of Professional Service, University Service, and Public Service

The candidate's specific professional accomplishments shall be noted, such as, professional registration, consulting achievements, patents, acknowledgements, and citations. Such accomplishments are important indicators of professional competence, especially when they lead to national or international recognition. Examples include requests from the National Academy of Engineering, National Academy of Science, or National Research Council for opinions, and participation in Presidential or State Commissions. In such cases, the stature of the person's other achievements are recognized publicly. Commitments to and honors from national professional societies are a relevant public recognition of service to the profession.

Service to the University will include membership, and active participation in, various departmental, college and University-wide committees. Special efforts to host at the University prestigious national and international technical meetings will also be considered service to the University. Giving good visibility to the University while at other institutions, for example, while on sabbatical, will also constitute service to the University. Certain special assignments for academic faculty require a continuing commitment of a substantial fraction of a faculty member's time. An example is Director of a major research or teaching Laboratory. Herein special academic talents are utilized to fill special university needs. Promotion and tenure decisions for such persons will take into account the accomplishments and the time spent in these special assignments.

The excellence of public service may be recognized at the local, state, national and international levels. Examples of such service include participation, in a professional capacity, in special task committees formed at the request of city, county, state, and federal governments, and service to national and international organizations.

We use the College guidelines for P&T. However, we have a work statement addition. Attachment #1 is for assistant professors and attachment #2 is for associate professors.

SECTION II

SUMMARY OF CANDIDATE'S WORKLOAD ASSIGNMENT

SUMMARY OF _____'S WORKLOAD ASSIGNMENT

Ara Arabyan, Interim Head
Department of Aerospace and Mechanical Engineering

One-page statement prepared by the department head summarizing the candidate's assigned workload.

Explain candidate's workload. Describe the role of the candidate within the department's mission and strategic plan. **Write ~ 1 paragraph; dept head reads/edits**

Teaching: Associate professors are expected to contribute to the department's teaching load, to contribute to development of department's academic program by contributions to course syllabi, and to participate in student advising including service on graduate student's thesis dissertation committees. The workload for teaching is approximately 45%.

Research: Associate professors are expected to develop original research/scholarly activity as evidenced by publication record in peer reviewed professional journals recognized at national and international levels, to contribute to grants and contract activities, and to involve graduate students in collaborative research. The workload for research is approximately 45%.

Service: Associate professors are expected to contribute to department committees, to contribute to the profession through service to professional organizations and journals. The workload for service is about 10%.

I agree with this summary of my workload assignment: _____
                                                                    xxxxxxxxxxxxx

Interim Department Head: _____
                                                    Ara Arabyan

SECTION II

SUMMARY OF CANDIDATE'S WORKLOAD ASSIGNMENT

SUMMARY OF _____'s WORKLOAD ASSIGNMENT

Ara Arabyan, Interim Head
Department of Aerospace and Mechanical Engineering

One-page statement prepared by the department head summarizing the candidate's assigned workload.

Explain candidate's workload. Describe the role of the candidate within the department's mission and strategic plan. **Write ~ 1 paragraph; dept head reads/edits**

Teaching: Assistant professors are expected to teach two courses per year for the first two years. Thereafter, the teaching load is normally three courses per year. Additionally, it is expected that assistant professors participate in the supervision of graduate student research at the MS or PhD levels, independent studies, or design projects. Other activities include some combination of participation on examination committees, development of innovative methods in teaching or development of new courses. The workload for teaching is approximately 45%.

Research: Assistant professors are expected to develop funded research programs in order to support the research of graduate students. Major results from this activity are expected to be disseminated to the technical community via archival publications of the highest quality. Other important activities include research or equipment proposal submission, presentations at technical meetings, collaboration with other faculty members in the academic community, interactions with industry or national laboratories, and the mentoring of post-doctoral fellows or visiting scholars. The workload for research is approximately 45%.

Service: Assistant professors are expected to participate in some service activity, both within the University and externally in the profession. Activities in this category include committee assignments, mentoring student organizations, manuscript refereeing, organization of technical sessions at conferences, or outreach. The workload for service is about 10%.

I agree with this summary of my workload assignment: _____
xxxxxxxxxxxxxxxxxxx

Interim Department Head: _____
Ara Arabyan

DEPARTMENT OF CIVIL ENGINEERING AND ENGINEERING MECHANICS

PERFORMANCE REVIEW GUIDELINES
Processes, Criteria, and Measures

Approved by CEEM Faculty January 1999
Revisions approved by CEEM Faculty December 17, 1999
Revisions Approved: 12/7/2000

I.   INTRODUCTION

Faculty members of the University of Arizona are evaluated with respect to all personnel matters on the basis of their performance. The annual performance review is intended to support faculty members in achieving excellence in the performance of their duties and responsibilities. It provides a basis for the assessment and enhancement of faculty performance as well as accountability to the people of Arizona.

The function of the review is both formative and summative: it involves faculty in the design of their own performance expectations within the context of the Department's mission, and it provides a peer and administrative review process to evaluate the success of each year's work. More specifically, this formal review is intended:

- To involve faculty members in the design and evaluation of objectives and goals of their academic programs and in the identification of the performance expectations central to their own personal and professional growth;
- To assess actual performance and accomplishment in the areas of teaching, research/scholarly activity, and professional service through the use of peer and administrative review;
- To promote the effectiveness of faculty members through an articulation of the types of contributions they might make that enhance the University;
- To provide a written record of faculty performance to support personnel decisions;
- To recognize and maximize the special talents, capabilities and achievements of faculty members; and
- To assist faculty members in improving their contributions in any areas where performance is considered by their peers to be below expectations.

The purpose of this document is to specify the processes, criteria, and measures used in the Department of Civil Engineering and Engineering Mechanics to achieve the goals of

the annual performance review, and to clarify the relationship of this review to the tenure processes which apply to tenure-eligible faculty and the post-tenure processes which apply to tenured faculty.

It is intended that this document be consistent with applicable portions of the Arizona Board of Regents Policy Manual (ABORPM) and the University of Arizona Handbook for Appointed Personnel (UHAP). In case of conflict, the provisions of ABORPM and UHAP shall prevail. In general, the annual performance review is covered by ABORPM Sections 6-201 and 6-211 and by UHAP Section 3.10.01 through 3.10.03. Promotion and tenure processes are described in UHAP 3.11 and 3.12, and post-tenure processes in UHAP 3.10.04 through 3.10.06.

II. PROCESS

A. Period of Review

Post-tenure and annual performance reviews for faculty are conducted each year beginning in January, with the entire process finished by May 30. Each faculty member shall submit an annual report to the Department Head no later than February 1st of each year. The report shall describe contributions of the faculty member to the academic mission of the Department during the previous three calendar years (or period of service if less than three years) for all of the items reported except for funded research expenditures which is the last five fiscal years (the last fiscal year will only cover half of the period). This report shall serve as the primary source of information for review by the peer committee and Department Head.

B. Performance Ratings

Faculty shall be rated in each of the three primary areas of responsibility (teaching, research/scholarly activity, and service) by the Department Head and only in two areas (teaching and research) by the peer review committee. An overall rating shall also be given. To get an overall "satisfactory" rating the faculty member must obtain "satisfactory" rating in at least two of the three categories.

C. Workload Assignments

The overall Department goals for division of responsibility are approximately 45% teaching (range: 30-50%), approximately 45% research/scholarly activity (range: 30-50%), and approximately 10% service (range 10-20%). The specific assignment of weights for a particular faculty member is discussed later in these guidelines. It is expected that these assignments will vary as careers progress and in accordance with the strengths of each faculty member. For example, tenure-eligible faculty might be reasonably expected to spend more time on research/scholarly activity and less on service, with the service activities weighted more toward beginning activity in professional societies, and the teaching assignments emphasizing research-related (upper division or graduate level) courses. Requests for assignments outside these ranges must be negotiated with the Department Head.

Periods of time spent on sabbatical leave, leave without pay, or full-time administrative assignments are separately evaluated.

D. Roles of the Peer Review Committee and Department Head

The Peer Review Committee consists of all tenured and tenure-track faculty members.

The functions of the Peer Review Committee are to maintain this document and to conduct the post-tenure and annual peer reviews of all faculty as required by University regulations. All peer evaluations for each faculty member are transmitted directly to the Department Head.

The Department Head evaluates each faculty member, independently of the Peer Review Committee, on the basis of information provided by the faculty member, peer evaluators, students, and such other information as is available. The Department Head provides the faculty member with his/her preliminary written evaluation, as well as the summary from the Peer Review Committee, no later than May 1st.

The Department Head and faculty member meet no later than May 30th to discuss the Head's written evaluation, and to agree upon goals, assignments, and expectations for the next annual review. The faculty member provides comments as desired, signs the document, and returns it to the Head within 15 days of this meeting. If there are significant disagreements between the faculty member and the Head about either the evaluation or the work assignment, an appeal may be made to the Dean.

III.   CRITERIA AND MEASURES

General Guidelines:

A. Teaching

The instructional function of the University requires faculty members who can effectively communicate the content of the current body of knowledge and the latest research results in the classroom, in other learning environments, with individual student contact, and through professional modes of publication in diverse media. Teaching is to be interpreted in the broadest possible sense consistent with the educational mission of the University.

Activities considered to be positive contributions to this mission may include, but are not limited to: teaching regular course offerings, tutoring students during office hours, developing course materials, developing replicable systems of instruction (e.g. designing computer assisted learning modules or TA-instructed laboratories), coordinating or team-teaching a multi-disciplinary course, supervising independent study courses or seminars, supervising graduate and undergraduate research (including, but not limited to, senior projects, theses, design projects, and dissertations), implementing innovative technology or methodology for instruction, developing and applying educational innovations in the classroom, providing meaningful and timely feedback to students on their work, advising graduates and undergraduate students on programs of study, advising student groups, serving on master's or doctoral committees, mentoring graduate students, advising about

career planning, helping students to improve communication and presentation skills, writing textbooks or laboratory manuals, reviewing textbooks written by others, developing instructional or design projects, publishing papers on teaching, attending or presenting seminars on teaching, seeking external evaluation for improvement of teaching, or performing self-assessment for the improvement of teaching.

Measures used to assess the quantity and quality of these activities may include, but are not limited to: student evaluations of teaching, peer and administrative review of material presented in the annual report and/or an associated teaching portfolio, self evaluation, opinions of technical support personnel and teaching assistants, adoption of curricular or teaching materials at other institutions, invitations to deliver short courses, seminars or lectures to external audiences, and special honors or recognition for teaching excellence or innovation.

The criteria for a rating of satisfactory in teaching are that the faculty member carry out his/her teaching assignments, and that the preponderance of evidence from student, peer, and administrative assessments indicate adequate performance of these duties. It is important to note that faculty may need improvement in one or more areas of teaching but still not be unsatisfactory (see Attachment 1).

Ratings of "meets expectations" or "exceeds expectations" indicate significant contributions in the various activities described above, consistent with the faculty member's workload assignments and with the performance levels of other faculty in the department. A rating of "truly exceptional" would indicate that career milestones in teaching, as indicated by recognition from outside the Department, have been achieved.

B. Research/Scholarly Activity

The research function of the University requires faculty members to be actively engaged in the expansion of intellectual and scholarly frontiers, in the creation and/or application of new knowledge, and in the integration of knowledge from various disciplines. This scholarly activity is to be interpreted in the broadest possible sense, consistent with the research mission of the University.

Activities considered to be positive contributions to this mission may include, but are not limited to: engaging in ongoing programs of basic or applied research; supervising research by students, investigating educationally relevant problems; obtaining grants and contracts or other outside support for projects; producing deliverable systems (e.g. hardware, software, designs, algorithms, etc. as well as the technical reports describing these deliverables); obtaining patents or royalties; publishing books, book chapters, journal articles, peer-reviewed conference papers, monographs, abstracts, and reviews; producing material in electronic media; presenting invited talks at conferences, workshops, seminars or poster sessions; editing books or journals; and production of other non-refereed publications, including electronic media.

Measures used to assess the quantity and quality of these activities may include, but are not limited to: peer and administrative review of material presented in the annual report, self evaluation, citations, opinions of internal collaborators and technical support personnel, awards and honors, and professional certifications.

The criteria for a rating of satisfactory in research/scholarly activity are that the faculty member produce a yearly average of participation in at least one sponsored

research gift, grant or contract (as PI or Co-PI), or publication as author or co-author of at least one peer-reviewed document (books, book chapters, journal articles, conference papers, etc.) or service as thesis or dissertation director for one student who graduated during the year or any satisfactory combination of these three activities.[1] It is important to note that faculty may need improvement in one or more areas of research but still not be unsatisfactory (see Attachment 1).

Ratings of "meets expectations" or "exceeds expectations" indicate significant contributions in the various activities described above, consistent with the faculty member's workload assignments and with the performance levels of other faculty in the department. A rating of "truly exceptional" would indicate that career milestones in research, as indicated by recognition from outside the Department, have been achieved.

C. Service

Service is often partitioned into areas of faculty service (participation in university activities other than teaching or research), professional service (voluntary activities with professional organizations in the faculty member's discipline), and public or community service (outreach). Service becomes an increasingly important activity as the faculty member advances through the professorial ranks. Outreach is a form of scholarship which is particularly important to a land-grant institution; it involves delivering, applying, and preserving knowledge for the direct benefit of external audiences in ways that are consistent with University, College, and Departmental missions.

Activities considered to be positive contributions to the service function may include, but are not limited to: serving on department, college, and/or university committees; chairing any committee; serving in the faculty senate or in other faculty governance roles; serving as a sponsor for student activities and/or groups; administrative assignments; mentoring of other faculty; recruiting of students; recruiting of faculty; activity in professional organizations; development of special relationships with industry; consulting to other universities, colleges, or primary or secondary schools; developing external relations with government entities; serving on committees or boards for federal or state government agencies; participating in local, state, or national civic activities and organizations; and applying one's academic expertise in the local, state, or national community.

Measures used to assess the quantity and quality of these activities may include, but are not limited to: peer and administrative review of material presented in the annual report; self evaluation; opinions of faculty and staff colleagues; opinions of university leaders, committee members or chairs; awards and honors; and letters or certificates of public service.

The criteria for a rating of satisfactory in service are that the faculty member produce a yearly average of satisfactory participation in at least one faculty committee or the activities of one professional organization or one outreach function or any satisfactory combination of these three activities.[2] It is important to note that faculty may need improvement in one or more areas of service, but still not be unsatisfactory (see Attachment 1).

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[1] These quantities assume a 45% research load and should be adjusted to actual workload assignments
[2] These quantities assume a 10% service load and should be adjusted to actual workload assignments.

Ratings of "meets expectations" or "exceeds expectations" indicate significant contributions in the various activities described above, consistent with the faculty member's workload assignments and with the performance levels of other faculty in the department. A rating of "truly exceptional" would indicate that very unusual accomplishments in service, as indicated by recognition from outside the Department, have been achieved.

D. Overall Rating

The overall rating assigned by the Peer Review Committee and the Department Head shall be determined by the results of the three (teaching, research and service for the Department Head) or two (teaching and research for the Committee) individual ratings consistent with the workload assignment and with the mission and goals of the Department. Since the individual ratings are themselves influenced (with regard to quantity of production) by the workload assignment, a rating of unsatisfactory in two or more of the three individual areas would normally dictate an overall rating of unsatisfactory.

Specific Guidelines:

This section describes in detail how teaching and research activities should be graded in a quantitative manner. To develop these guidelines an attempt has been made to avoid any unnecessary complication of the evaluation and at the same time make it more objective.

As mentioned earlier every faculty member will be evaluated by all tenure-track faculty members of the department and by the Department Head separately. It is expected that the bias factor will be reduced on the average score when all faculty members participate in the evaluation process. Faculty members will evaluate only teaching and research activities while the Department Head will evaluate all three activities of individual faculty members.

Selection of Weights:
Every faculty member will be assigned weights within the limits allowed (teaching 30-50%, research 30-50%, service 10-20%) to maximize the score. Under exceptional circumstances Department Head may permit an individual to claim a higher limit (not to exceed 30%) for service for a given year
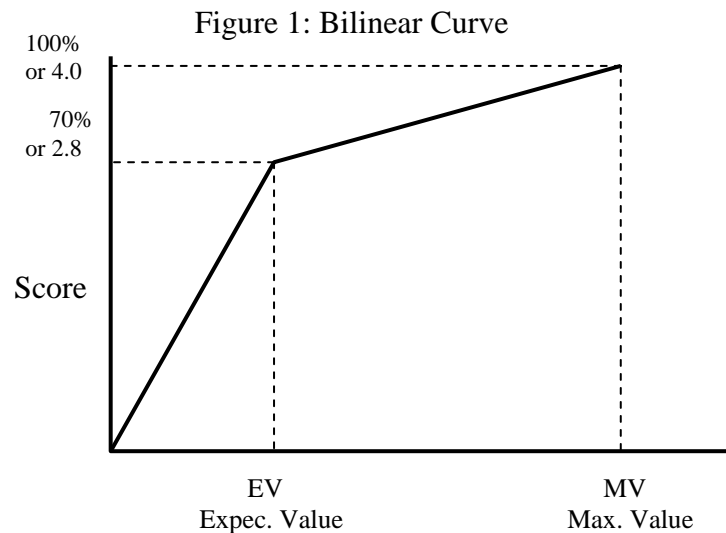
Evaluation Process:
Faculty members' performance in every category will be first judged against the criteria for 'satisfactory' ratings, as discussed above, under general guidelines. If in any category a faculty member receives an 'unsatisfactory' rating then he/she should receive a zero point in that category. Performance in only those areas that satisfy the 'satisfactory' rating conditions will be further evaluated based on the following guidelines.

Numerical Criteria:

The evaluation system rewards the faculty's achievement following the bilinear curve shown in Figure 1. In each case 70% credit (2.8 in a scale of 4) is given if the person meets the "Expected Value (EV)". The full score (4), i.e. 100%, will be given to the faculty with the "Maximum Value (MV)" for that particular aspect of performance.

It is further recognized that there are unavoidable variations in one's output from year to year. This is especially true for the research dollars and graduate student support spent within a year. That is why it has been approved by the CEEM faculty that research dollars will be counted over the last five fiscal years and all other performance measures will be averaged over the last three calendar years.

Figure 1: Bilinear Curve

The following details how various components of one's activities must be evaluated.

Teaching (30%-50% of the total credit)

Teaching performance will be evaluated by teaching quality (45%), quantity (45%) and other factors (10%)

Quality (45%)

This is based on the short TCE forms which are currently in use. In particular, the faculty member's score for question number 1 (overall rating for instructor's effectiveness) will be used for determining the teaching quality. The TCE reports give rankings of HI, MED-HI, MEDIUM, MED-LO, and LO for each question. These will be assigned points from 5 to 1. (*Note that TCE scores for junior, senior and graduate level courses are generally higher than TCE scores for freshman and sophomore level courses. That is why it is recommended that instead of taking the absolute TCE scores the ratings HI, MED, LO etc. be taken, because these ratings are given by the University Teaching*

Center after comparing one's score with those in similar level courses) The expected value is 3 (MEDIUM) and the Maximum Value will be that belonging to the highest scoring faculty.

Special bonus points will be given to those faculty who receive prestigious National and university level teaching awards. Department level teaching awards will be considered in the 'other' category.

Quantity (45%)

The Expected Value (EV) for this category is 4 courses (i.e. 12 credit hours) per academic year (i.e. fall and spring semesters). For courses which are team taught, each faculty will receive the appropriate fraction of the credits for that course. The teaching of a new course will receive 25% increase in the number of credit hours for that course. If a faculty member teaches a course for the first time in his/her career then it will be considered a new course. In addition to regular classroom teaching, advising of graduate students will also be counted under this category. The advising of each Ph.D. and M.S. student for a 12 month period will bring the faculty members 3 and 1 units, respectively. The accumulation of 10 such units is equivalent to teaching one course. The maximum number of years that a faculty could claim credit for each Ph.D. and M.S. student are 4, and 2, respectively.

Other (10%)

This category covers such activities as advising of undergraduates for their course selection, independent studies, advising undergraduates in their research experience (REU), teaching awards which are not covered under teaching quality, serving on graduate student committees, etc. Evaluator will use his/her judgement to assign points under this category.

Research (30%-50% of the total credit)

Research performance will be evaluated by publications (45%), research grants/proposals (40%) and financial support to graduate students(15%).

Publications (45%)

Publications are divided into three categories

a) Refereed Journal Articles and Chapters in Books (35%); EV = 2 per year, or 6 for the three-calendar year evaluation period.
b) Conference (refereed or not) papers (10%); EV = 1 per year, or 3 for the three-year evaluation period.

c) Technical Reports, Symposia/conference presentations where only abstracts are published - If a faculty member receives less than 5% credit in category b (conference) then he/she can claim up to a maximum 5% credit in category c.

Note: Publishing of an entire book and presenting keynote theme papers in a conference are special cases and will be treated as such. In a conference only a few (one to four) speakers receive this distinction. Appropriate documentation is necessary to justify the keynote speaker claim.

Research Grants/Proposals (40%)

This portion is further divided into two components:

a) Research $ spent by the individual faculty in the department (35%); EV = $50K per year or $250K over five fiscal years. The bilinear relation will be used only if the highest research $ exceeds $75K per year or $375K over five fiscal years; otherwise, a linear distribution will be used. Figures provided by the CEEM department Business Office, after a review by the faculty members, will be used for this calculation. Other research funds and gifts that are not recorded by the CEEM Business Office as research grants also benefit the department and should be regarded as a service to the department and be listed under the service activities.

b) Research Proposals Submitted (5%); EV = 2 per year for faculty members who generate less than $50K per fiscal year, 1 for faculty members who generate between $50K and $100K per fiscal year and 0 for those who generate more than $100K per year. Those who generate more than $100K per year in research grants will get full 5% credit in this category irrespective of the number of research proposals submitted.

Graduate Student Support (15%)

$ amount paid to the graduate students. EV = $12K per year or $60K over the last five fiscal years. The figures will be provided by the CEEM Business Office and it will include funds spent to pay graduate students as RAs during the academic year and wages for the fiscal year. To facilitate the estimation of funds spent to pay graduate students (paid during the academic year as RAs) during the summer they will be assumed to be 1/3 of the funds spent during the corresponding academic year.

Service (10%-20% of the total credit)

Service is evaluated in two areas: a) departmental, b) College, University, and professional service. Equal weight is given to the two areas. Department Head will evaluate the service activities.

IV. OUTCOMES OF THE REVIEW PROCESS

A. General Expectations

Given the high quality of the Department and its faculty, and the very stringent standards applied to the hiring and promotion processes, it is expected that ratings of unsatisfactory in any of the three areas will be very rare and that an overall unsatisfactory rating will be even more unlikely. A small fraction of the faculty may be identified from time to time as needing improvement, and it is expected that faculty development support from the department and university, as well as mentoring by other faculty, will assist those individuals in quickly regaining the expected levels of productivity. While some faculty will from time to time receive a rating of truly exceptional in one of the three areas, an overall rating of truly exceptional would require superhuman performance.[3] Thus it is anticipated that the vast majority of the faculty of the Department will meet or exceed expectations, in the individual areas as well as overall and that truly exceptional overall performance will be rare.

B. Rewards

As shown in Attachment 1, those faculty with overall ratings in the top three categories will be eligible for available salary increases as well as for support for growth and development. This applies to tenure-eligible faculty as well as to tenured faculty. An algorithm for determining allocation of these rewards will be determined by the Department Head, in consultation with the faculty members, subject to any external constraints which may apply. It is recommended that even within the "Meets Expectations" category, those who score above the mean value should be distinguished from those who score below the mean value during allocation of the rewards.

Those faculty with an overall rating in the fourth category will be eligible for departmental and university support for remedial improvement of performance, and may be eligible for certain salary increases (e.g. cost-of-living raises). Those faculty receiving an overall unsatisfactory rating will not be eligible for any salary increases unless required by State law, but will be eligible for departmental and university support for improvement of performance.

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[3] Richard M. Felder, "The Myth of the Superhuman Professor, *Journal of Engineering Education*, Vol. 83, No. 2, April 1994, pp. 105-110.

C. Relationship to Tenure and Post-Tenure Processes

Tenure-eligible faculty are also required to participate in the tenure processes described in UHAP 3.12. The annual performance reviews are taken into account as part of the promotion and tenure process, but such evaluations are not determinative on promotion and tenure issues. Satisfactory ratings in the annual performance reviews do not necessarily indicate successful progress toward promotion and tenure. Progress toward promotion and tenure requires scholarly accomplishment over a period of years in the broader range of faculty responsibilities, and includes evaluation by external referees, which is not a part of the annual review process. Criteria and decisions with regard to promotion and tenure are detailed in UHAP 3.11.

For tenured faculty, the annual review is NOT intended to be a re-tenuring process; it is simply an opportunity to assess progress toward the goals outlined in Article I of this document. Those tenured faculty who receive a rating of unsatisfactory in any of the three individual areas, or an overall rating of unsatisfactory, however, are required to participate in the post-tenure processes described in UHAP 3.10.04 through 3.10.06.

D. Expectations for the Next Review Year

Criteria for annual performance must consider teaching effectiveness, research and scholarly activity, and service. The evaluation criteria are intended to provide for recognition of long-term faculty activities and outcomes. Concentration of effort in one of the three major areas of faculty responsibilities during a particular year is permissible, and may even be encouraged. These guidelines are designed to be flexible enough to meet the particular objectives of the faculty member, the Department, the College and the University.

ATTACHMENT 1

ANNUAL PERFORMANCE REVIEW

SAMPLE RATING SCALE

	Performance Rating	Faculty Development: Improvement Action*	Compensation Action
	Truly exceptional	Departmental and UA support for growth and development	Eligible for available salary increases
	Exceeds Expectations		
	Meets Expectations		
	Needs Improvement	Departmental and UA support for improvement of performance	May be eligible for certain salary increases
Overall Unsatisfactory	*Unsatisfactory*	Mandated Performance improved Plan for tenured faculty	No salary increase unless required by law

***Tenured faculty who are overall satisfactory but need improvement in a single area must enter a Faculty Development Plan.

SECTION III: DEPARTMENTAL PROMOTION AND TENURE GUIDELINES

Include: *Relevant parts* of departmental *and* college promotion and tenure criteria summarized using the one-page format (see example in Appendix B) as an aid to the University Advisory Committee in its deliberations. (You may also include the full set of guidelines if you feel that would be helpful).

(Based on Revised Policies for Promotion and Tenure Decisions approved by CoEM faculty 3-21-94) Candidates for tenure must also meet criteria for rank. CoEM criteria include an introduction and 2 sections covering appointment, promotion and tenure decisions by rank and role.

General: The academic goals of the College faculty are excellence in teaching and in engineering research as well as in public service and professional practice. Scholarly accomplishment over a period of years in the broader range of these faculty goals is required for progress towards promotion and tenure. However, concentration of effort in teaching or in research is permissible, and may be encouraged in some departments. It is recognized that superior performance in meeting the goals of the College may be accomplished by a faculty that includes some members with backgrounds other than engineering. These criteria shall apply to those faculty members, but shall be modified as necessary to take into account the background of the candidate and their academic assignments within the College.

1. **Criteria by Rank**: A faculty member under consideration for promotion or tenure must give evidence of excellence in scholarly teaching and in scholarly research, with superior performance in at least one of these areas. Competence in professional practice and service is expected of all.

Associate Professor: Promotion to associate professor with tenure requires that the candidate has offered tangible evidence of creative and significant scholarship as shown in part by the evaluation, both within and outside the University, of his or her publications. The faculty candidate must also demonstrate he or she is an effective teacher, well prepared in his or her given field, with the ability to motivate students, to communicate knowledge and to sustain a first-rate scholarly program.

Professor: Promotion to professor is recognition that the candidate is regarded as an excellent scholar in his/her field. Solicited letters from recognized scholars and researchers outside the University in the candidate's field of specialization will weigh heavily in the evaluation of stature. Excellence in teaching should be considered of equal importance to excellence in research. Each full professor should contribute to teaching, research and service and show outstanding contribution in at least two of these.

2. **Criteria by Role**: The College requires for each of these promotion and tenure decision, documentation of the candidate's excellence in scholarly teaching combined with good performance in research of excellence in research or excellence in research combined with good performance in scholarly teaching. Excellence in service combined with good performance in teaching and research is not sufficient to insure promotion or tenure.

Scholarly Teaching: Mastery of subject matter and dedication to the needs of students are central to excellence in teaching. The term teaching includes classroom instruction as well as individual student guidance at both the undergraduate and graduate levels. The process of committee review must evaluate the quality of teaching, as evidenced by documentation collected by the candidate and by the Department Faculty Status Committee. This may include student evaluations, letters from former students, peer evaluations, and the number and quality of reports, theses, and dissertations directed by the candidate.

Scholarly Research: The most important measure of research activity is presentation of the candidate's research results in peer-reviewed publications. Articles in high-quality peer-reviewed publications (such as journals, conference proceedings, scholarly books, etc.) will count more heavily in the evaluation than other publication means, such as non peer-reviewed symposium/workshop proceedings, technical reports which are not peer-reviewed, or other lesser quality publications. A high level of research competency is required to secure research grants on a competitive basis over extended periods of time, and such awards imply high quality work. The stature, credibility and reputation of the candidate must be documented by letters from recognized scholars and researchers in the candidate's field.

Service: The candidate's specific professional accomplishments shall be noted, such as, professional registration, consulting achievements, patents, acknowledgements, and citations. Such accomplishments are important indicators of professional competence; especially when they lead to national and international recognition. Service to the University will include membership, and active participation in, various departmental, college and University-wide committees. Special efforts to host at the University prestigious national and international technical meetings will also be considered service to the University. Excellence in public service includes professional society work on committees and elected officer positions.

Systems and Industrial Engineering
Annual Report and
Post-tenure Review Process
Approved by the SIE faculty January 26, 2010

I. BACKGROUND AND PURPOSE

The Arizona Board of Regents (ABOR) requires each faculty member to be formally evaluated on his or her performance once every twelve months. The University of Arizona Handbook for Appointed Personnel (UHAP) sets forth guidelines for the annual review process for faculty, professional personnel and administrators.

The ABOR mandate for post-tenure review has been incorporated into UA policy in revised UHAP language. This revised language combines ABOR policy language with that of the UA document on Post-tenure Review, passed by the Faculty Senate in October 1996. Thus, the revised language in UHAP represents the official UA policy on both the annual performance review for all faculty and administrators, and post-tenure review for tenured faculty.

The SIE Department's Vision is "that by Year 2015, the Systems and Industrial Engineering Department at the University of Arizona will be even more widely recognized - internationally, nationally, in Arizona, and within the University - and will have educational and major research programs that are rated in the top decile of such programs within public academic institutions."

The SIE Department's Mission is:
- Provide high quality education, and a basis for lifelong learning of the engineering and scientific knowledge required for analysis, design, improvement, and evaluation of integrated systems of people, computers, material, and equipment - as embodied in the disciplines of industrial engineering, operations research, systems engineering, and similar fields.
- Lead in research in key areas within the departmental disciplines, with particular relevance to systems of strategic importance to the state and the nation, such as manufacturing, telecommunications, transportation, health-care, service, and environmental systems.
- Provide professional service and academic leadership in the disciplines of the Systems and Industrial Engineering Department, within the university, industries, governmental agencies, private and public organizations, and professional societies.

The purpose of this Post-tenure Review Process (PRP) document is to specify the processes, criteria, measures, and expected workload levels used in the Department of Systems and Industrial Engineering to achieve the goals of the annual performance review, and to clarify the relationship of this review to the tenure processes that apply to tenure-eligible faculty and the post-tenure processes that apply to tenured faculty. It is intended that this document be consistent with applicable portions of the Arizona Board of Regents (ABOR) Policy Manual and the University of Arizona Handbook for Appointed Personnel (UHAP). In case of conflict, the provisions of UHAP and of ABOR shall prevail.

The function of the review is both formative and summative: it involves faculty in the design of their own performance expectations within the context of the department's mission, and it provides a peer and administrative review process to evaluate the success of each year's work. More specifically, this formal review is intended:

- to involve faculty members in the design and evaluation of objectives and goals of their academic programs and in the identification of the performance expectations central to their own personal and professional growth;
- to assess actual performance and accomplishment in the areas of teaching, research/scholarly activity, and professional service through the use of peer and administrative review;
- to promote the effectiveness of faculty members through an articulation of the types of contributions they might make that enhance the University;
- to provide a written record of faculty performance to support personnel decisions;
- to recognize and maximize the special talents, capabilities and achievements of faculty members; and
- to assist faculty members in improving their contributions in any areas where performance is considered by their peers to be below expectations.

The University of Arizona takes the position that the post-tenure review process should emanate from the regular annual performance review process. The annual performance review process for faculty is grounded in the performance appropriate to the specific academic unit. The development of criteria and measures for the annual review (including post-tenure review) must be closely integrated with the unit's promotion and tenure criteria. This will ensure that post-tenure review is carried out within the context of regular departmental and institutional objectives and evaluation processes. It also answers the mandate for post-tenure review with the least amount of extra work for faculty committees and administrative review. Criteria and measures should encourage the highest levels of faculty work, and at the same time provide fair, consistent and reasonable standards for the assessment of faculty performance.

II. PROCESS

IIA. Period of Review

Annual performance reviews for faculty are conducted each year beginning in January, with the written evaluation finished by April 15. In January the Department Head shall give each faculty member a statement containing (1) numbers supplied by the SIE Business Manager for the indirect cost (IDC) dollars received by the department in that year and the amount of money spent through the department in that year for that faculty member, (2) the list of graduate students supported by that faculty member, (3) the agreed upon workload percentages for that faculty member, and (4) a statement that for grants, papers and seminars details should be given such as title, date, location, amount, responsibility, etc. Individual faculty members can then discuss these numbers with the Head and corrected lists can be given to the Post-tenure Review Committee (PRC). Each faculty member shall submit an annual report to the department head no later than February first of each year. The report shall list the objectives for the current reporting period as previously agreed to, describe contributions of the faculty member to the academic mission of the department during the past year (or period of service if less than three years), provide a self evaluation of performance, and state objectives for the next calendar year. This

report shall serve as the primary source of information for review by the PRC and department head.

The PRC will evaluate all of the annual reports and write a report to the department head summarizing their findings and opinions. The department head will use this to help formulate his or her annual review letters. On some random basis, within each five-year period, each faculty member's annual report and evaluations will be sent to the College of Engineering's Committee to Audit Department Post-tenure Reviews.

Since the evaluation is on a three-year basis, the PRC will use three years of data to develop evaluations (or the number of years of service if less than three are available).

IIB. Performance Ratings
Faculty shall be rated in each of the three primary areas of responsibility (teaching, research/scholarly activity, and service) according to a five level-scale. An overall rating shall also be given according to the same scale. The term "satisfactory or better" refers to any of the top four ratings.

ANNUAL PERFORMANCE REVIEW RATING SCALE

	Performance Rating	Faculty Development: Improvement Action*	Compensation Action
Overall Satisfactory	Truly exceptional Exceeds expectations Meets expectations	Departmental and UA support for growth and development	Eligible for available salary increases
	Needs improvement	Departmental and UA support for remedial improvement of performance*	May be eligible for certain salary increases
Overall Unsatisfactory	Unsatisfactory	Mandated performance improvement plan for tenured faculty	No salary increase unless required by State law

*Tenured faculty who are "overall satisfactory" but deficient in a single area must enter a faculty development plan.

IIC. Workload Assignments
It is the responsibility of the department head to assign faculty workload. The standard SIE department goals for division of workload are 40 percent teaching, 40 percent research/scholarly activity, and 20 percent service. Normal course loads, service assignments and research expectations will reflect the 40:40:20 split. A faculty member may negotiate with the head for a different allocation. Typical conditions for a different workload include:
- course buy-out (a faculty member will request a higher research/service percentage and a lower teaching percentage)

- a significantly higher service load (a faculty member will request a higher service percentage and a lower teaching and/or research percentage)
- significantly higher teaching loads such as teaching extra courses, teaching large enrollment classes, or new course development effort (a faculty member may request a higher teaching percentage and a lower service and/or research percentage)

Workload assignments for individual faculty are flexible. However, each category must carry a weight of at least 20% in every year and service may be no more than 50%. Requests for assignments different from the 40, 40, 20 standard should be negotiated with the department head at the time of the previous year's annual review.

It is expected that workload assignments will vary as careers progress and in accordance with the strengths of each faculty member. For example, tenure-eligible faculty might be reasonably expected to spend more time on research/scholarly activity and less on service. Teaching assignments should emphasize both lower and upper division undergraduate and graduate level courses. Assignment of specific faculty to specific courses will be done by the department head and will be based on the needs of the department.

Periods of time spent on sabbatical leave, leave without pay, or full-time administrative assignments are separately evaluated. Historically, the Department has used a weighting of 20:60:20 for faculty members who were on a one-semester sabbatical leave These numbers need not total 100 in cases when a faculty member is on paid assignment to the Dean's office, is on medical sick leave, has been recently hired by the department, etc. For a full-year sabbatical leave (for which the department receives 40% of the academic salary), the weighting might be 0:40:20, which totals 60.

IID. Roles of the Post-tenure Review Committee and Department Head

The Post-tenure Review Committee (PRC) consists of four elected members, two full professors, one associate professor (with tenure) and one assistant professor. Two members of the PRC being present at a meeting constitutes a quorum. The elections are conducted by the Department Head via secret ballot in December of each year, and the term of office is two years beginning on January 1. The department head calls the first committee meeting of each year, presides until one of the members is elected chair by the members of the new PRC, and does not attend meetings thereafter unless invited. The department head may request a meeting of the PRC to discuss particular issues.

The functions of the PRC are to maintain this document, as approved by the faculty, and to conduct the annual peer reviews of all faculty members as required by University regulations. The algorithm in this document should be used by each PRC member to help him or her form his or her opinions. The PRC members are not bound by the numbers suggested in this document. Each member should formulate his or her evaluations using both the protocol defined in this document and reasonable judgment about a faculty member's annual performance. A summary of the peer evaluations of the faculty is submitted to the department head.

The department head, working with the PRC, evaluates the faculty member based on information provided by the faculty member, peer evaluators, students and such other information as is

available. The department head provides the faculty member with a written evaluation as well as the summary from the PRC.

The department head and faculty member meet no later than May 15 to discuss the head's written evaluation, and to agree upon goals, assignments and expectations for the next annual review. The faculty member provides comments as desired, signs the document, and returns it to the department head within 15 days of this meeting. Any significant disagreements between the faculty member and the department head about either the evaluation or the work assignment shall go through the standard appeals process as covered by the ABOR Policy Manual.

III. CRITERIA, MEASURES AND ALGORITHM

The following criteria, measures and algorithm include input from previous measures/criteria developed in the planning documents, by the department head, and PRCs. In particular, the PRC considered the Department's overall vision and mission to be a national leader in Systems and Industrial Engineering. The mission suggests that effort should be targeted at increasing the Department's quality and hence its national reputation for excellence. Therefore, the criteria are weighted towards the goal of improving quality and national visibility. The criteria allow flexibility for faculty members to determine how to allocate their time within the constraints of their assigned responsibilities.

The evaluation method starts with a faculty member allocating percentages of their time to each of the three categories, teaching, research and service. As stated above, 40%, 40%, and 20% are the typical allocation percentages towards teaching, research, and service respectively. The allocation percentages will be the weights used in arriving at evaluations in individual areas. The PRC will use normalized averaging of the individual area ratings to determine an overall performance rating.

The PRC has categorized activities into three levels, national/international RECOGNITION, Significant VISIBILITY and Basic CONTRIBUTIONS. National/international RECOGNITION activities are all national level awards that directly increase SIE exposure and quality of reputation at the national/international level. Significant VISIBILITY criteria increase department exposure on the national level, University of Arizona Campus, Tucson and Arizona and measure excellence in the campus arenas of teaching, research and service. Basic CONTRIBUTIONS are for Department function and maintaining vibrant, competent educational and research programs.

Points for national/international recognition, significant visibility and basic contributions are added together in each category The PRC adds points from the previous two years using these weightings.

Category	most recent year	2nd most recent year	3rd most recent year
Teaching	0.5	0.25	0.25
Research	0.5	0.25	0.25
Service	0.5	0.25	0.25

Let

t = $\dfrac{\text{faculty member allocation percentage for the category for the current year}}{\text{standard allocation percentage for the category}}$

Given the average points per year score, the PRC will then map into the five division rating scale using the following guidelines:

weighted average points per year X	category evaluation rating
0.0×yy ≤ X < 1.5t×yy	unsatisfactory
1.5t×yy ≤ X < 3.0t×yy	needs improvement
3.0t×yy ≤ X < 9.0t×yy	meets expectation
9.0t×yy ≤ X < 15.0t×yy	exceeds expectation
X ≥ 15.0t×yy	truly exceptional

The variable yy will be 3.0 to begin with: after evaluating the annual reports, the PRC will adjust yy to complement the data. Each category may also have constraints on minimum levels of specific activities that help ensure department harmony and a high quality-learning environment for the students.

In the discussion that follows, the PRC has detailed potential activities and has sorted them into the three levels. These lists are not meant to be a complete set; however, it is up to the individual faculty member to make the case for inclusion of an activity at a particular point level. It is expected that small tasks (for example, participating in open houses, recruiting, providing information when needed,) that are critical for the operation of the department, will be performed routinely by faculty members, even though they receive no weight in the annual performance evaluation. Failure to perform these actions would be indications of unsatisfactory performance. Faculty members should report only points earned in the calendar year being evaluated. Each faculty member is responsible for the accuracy of the data he or she provides. Faculty members are encouraged to include teaching, research and service activities that are not listed in this document. Faculty members should not list membership on committees, editorships, etc. unless they have expended considerable effort in those positions in that year.

IIIA. Teaching
The instructional function of the University requires faculty members who can effectively communicate the content of the current body of knowledge and the latest research results in the classroom, in other learning environments, with individual student contact, and through professional modes of publication in diverse media. Teaching is to be interpreted in the broadest possible sense consistent with the educational mission of the University.

Contributions in teaching are measured on a year-to-year basis to promote continuous improvement in teaching. Activities in each category considered being positive contributions to the university and college teaching mission and the department goal of excellence in teaching, may include, but are not limited to:

- **National/international RECOGNITION (at most 90 points each occurrence)**
  1. National teaching awards (up to 30 points)
  2. Textbook awards (up to 30 points)
  3. Published textbook (textbooks are expected to have homework problems, solutions manuals, etc.) 60 points in the year of publication. Second (or third, etc.) editions of

textbooks 20 points in the year of publication. Translations of a textbook 10 point in the year of publication

4. Curriculum development award (up to 10 points)

- **Significant VISIBILITY**

1. Published laboratory manual (up to 20 points)

2. Supervising completed Ph.D. dissertations (12 points per graduate)

3. University of Arizona 5-star teaching award (60 points)

4. COEM teaching awards (10 points)

5. Development of a new instructional laboratory 1 point for each $10,000 of funding external to the department received for the laboratory.

- **Basic CONTRIBUTIONS**

1. New course development (1 point per catalog new course number, year in which the course is first offered)

2. Lab development material (1 point per course)

3. SIE teaching award (1 point)

4. Textbook reviews published in peer-reviewed journals (1 point per year maximum)

5. MS or PhD active committee member ½ point for each year served, maximum 10 points per year. Please specify names and dates.

6. Chair of a completed MS thesis or report (1 point). Please specify names and dates.

7. Student advising and mentoring (at most 4 points per year)

8. Outreach courses, e.g., summer session, Raytheon, Master of Engineering, web courses, etc. (3 points)

9. Regularly scheduled UofA courses. The following are based on three unit courses. A one-unit course would, for example, get 1/3 of the points. Ten points if the section mean for the first TCE question is above the comparison group mean. Five points if the section mean for the first TCE question is below the comparison group mean.
   - 2 extra points for classes between 50 and 75 students;
   - 3 extra points for classes larger than 75 students;
   - 1 extra point for classes with 6 or more video students;

Let T_j =total number of teaching category points in the $j = 1, 2$, and 3 most recent years. Then, the teaching category score T is:

$$T = 0.5T_1 + 0.25T_2 + 0.25T_3$$

The criteria for a rating of "satisfactory" or better in teaching are that the faculty member carry out their teaching assignments as given by the department head, demonstrate a clear respect of the needs of the students and a $T \geq 1.5*t \times yy$ points per year, where

$$t = \frac{\text{faculty member allocation percentage for teaching for the current year}}{0.4}$$

It is important to note that faculty can be rated as "needs improvement" in one or more areas of teaching, but still may not be rated as unsatisfactory (see IIB. Performance Ratings). The following table is used to assign teaching rating based on the calculated weighted average:

weighted average points per year T	category evaluation rating

$0.0 \times yy \leq T < 1.5t \times yy$	unsatisfactory
$1.5t \times yy \leq T < 3.0t \times yy$	needs improvement
$3.0t \times yy \leq T < 9.0t \times yy$	meets expectation
$9.0t \times yy \leq T < 15.0t \times yy$	exceeds expectation
$T \geq 15.0t \times yy$	truly exceptional

The variable yy will be 3.0 to begin with, then after evaluating the 2009 annual reports, the PRC will adjust yy to complement the data.

IIIB. Research/Scholarly Activity

The research function of the University requires faculty members to be actively engaged in the expansion of intellectual and scholarly frontiers, in the creation and/or application of new knowledge, and in the integration of knowledge from various disciplines. This scholarly activity is to be interpreted in the broadest possible sense, consistent with the research mission of the University.

Activities in each category considered to be positive contributions to the university and college research mission and the department goal of being nationally recognized in systems and industrial engineering research, may include, but are not limited to:

National/international RECOGNITION (at most 90 points each occurrence)

1. Election to a National Academy of Science or Engineering (90 points in the year of election and up to 10 points for each year of active service)

2. Election as Fellow of an international professional society (90 points in the year of election and up to 10 points for each year of active service)

3. National research awards, such as the NSF Presidential Young Investigator award (up to 30 points)

4. Keynote address at a national meeting (up to 15 points)

- **Significant VISIBILITY**

1. Research funding. For each grant, please list the funding source, name of grant, amount, duration, role and percent contribution. The PRC shall use numbers supplied by the SIE Business Manager. The PRC shall consider the indirect cost (IDC) dollars received by the department in that year (1 point for each $150), or the amount of money spent through the department in that year (1 point for each $10,000).

2. Supporting graduate students by means other than research grants though the SIE department (4 points per full time equivalent).

3. Publishing in refereed journals (5 points per paper in peer-reviewed journals.) If you are listing a publication with a year (usually the year of the copyright for a journal) different from the year of your annual report, please explain why.

4. Editorships for refereed journals, 3 points for associate, guest, area, department and book editor, 8 points for Editor-in-chief. There is a maximum of 10 points per year for guest, associate, area, department and book editorships in total.

5. Tutorials at major conferences (1 point each, maximum of 4 points per year).

- **Basic CONTRIBUTIONS**

1. Invited seminars and invited conference presentations (1 per event, maximum 4 per year)

2. Proposals submitted but not funded in that year (1 point per $40,000 based on PI percent responsibility, year of original submission only; maximum 4 points per year)
3. Papers submitted to peer-reviewed journals (1 point) (this activity is only available to assistant professors)
4. Publications in conference proceedings and technical society magazines (1 point) (maximum 4 points per year)
5. Book chapters (3 points per chapter)

Let R_j =total number of research category points in the $j = 1, 2$, and 3 most recent years. Then, the research category score R is:

$$R = 0.50R_1 + 0.25R_2 + 0.25R_3$$

The criteria for a rating of "satisfactory" or better in research are that the faculty member achieves $R \geq 1.5*r$ points per year where:

$$r = \frac{\text{faculty member allocation percentage for research for the current year}}{0.4}$$

It is important to note that faculty can be rated as "needs improvement" in one or more areas of research, but still may not be rated as unsatisfactory (see IIB. Performance Ratings).

The following table is used to assign research rating based on the calculated weighted average:

weighted average points per year x	category evaluation rating
$0.0 \times yy \leq R < 1.5r \times yy$	unsatisfactory
$1.5r \times yy \leq R < 3.0r \times yy$	needs improvement
$3.0r \times yy \leq R < 9.0r \times yy$	meets expectation
$9.0r \times yy \leq R < 15.0r \times yy$	exceeds expectation
$R \geq 15.0r \times yy$	truly exceptional

The variable yy will be 3.0 to begin with, then after evaluating the 2009 annual reports, the PRC will adjust yy to complement the data.

IIIC. Service

Service is often partitioned into areas of faculty service (participation in University activities other than teaching or research), professional service (voluntary activities with professional organizations in the faculty members discipline), and public or community service (outreach). Service becomes an increasingly important activity as the faculty member advances through the professorial ranks. Outreach is a form of scholarship that is particularly important to a land-grant institution; it involves delivering, applying and preserving knowledge for the direct benefit of external audiences in ways that are consistent with University, College and Departmental missions.

As part of service, we have defined a criterion called "faculty citizenship." Since the business of the department must be done (even though this receives little weight in the actual evaluation), and it is critical that we work together to achieve national recognition for the department, it is

important that everybody be a solid citizen. Poor citizenship is evidenced by consistently missing committee meetings, not having agreed upon committee work completed with high quality in a timely manner, consistently refusing to serve on student defense committees, consistent back biting and comments detrimental to the department, and consistent denigrating one half of the department at the expense of the other half. Citizenship also applies to producing things of value in our technical field, our nation and the world at large.

Activities in each category considered being positive contributions to the university and college service mission and the department goal of being nationally recognized in systems and industrial engineering outreach, may include, but are not limited to:

- **National/international RECOGNITION (at most 90 points each occurrence)**
    - National professional organization president (up to 60 points)
    - General Chair or Program Chair for a national meeting (up to 50 points, only in the year of the meeting)
    - Chair of a national steering committee (up to 40 points)
- **Significant VISIBILITY**
    - Cluster or multi-session chair at a national conference (15 points per event)
    - Chair of a University committee or faculty (20 points each)
    - University senator (15 points)
    - Chair of a College committee or faculty (15 points each)
    - Committee member of a national organization, specify role (15 points per organization)
    - Promotion and tenure letters of evaluation written for other universities, nomination and support letters for Fellows etc, please specify university or organization (2 points per letter, maximum 10 points per year)
    - Member of an NSF or NIH research review panel in Washington, DC (5 points).
    - Organizer of a miniconference in Tucson that lasts at least 7 hours and has at least 20 attendees (15 points)
- **Basic CONTRIBUTIONS**
    - Significant outreach/recruiting activities such as visits to schools (1 point per event, 3 points per year maximum)
    - Department committee chair (up to 5 points per committee)
    - Committee member (university/ college/ department) (1 point per committee, maximum 3 per year)
    - Session chair at national meeting (1 point per conference, maximum 3 points per year)
    - Referee of papers for research journals (0.5 points per paper, maximum 2 point per year)
    - Advising of student professional society chapter (1 point per year)

Note: Participation in a society or division that is part of a larger organization will be counted for basic contribution credit.

Let S_j = total number of service category points in the $j = 1, 2,$ and 3 most recent years. Then, the service category score S is:

$$S = 0.50S_1 + 0.25S_2 + 0.25S_3$$

The criteria for a rating of "satisfactory" or better in service are that the faculty member achieve $S \geq 1.5s$ points per year where

$$s = \frac{\text{faculty member allocation percentage for service for the current year}}{0.20}$$

and be recognized by the faculty as having satisfactory "faculty citizenship" during the past year. It is important to note that faculty can be rated as "needs improvement" in one or more areas of service, but still may not be rated as unsatisfactory (see IIB. Performance Ratings). The following table is used to assign service rating based on S:

weighted average points per year S	evaluation category rating
$0.0 \leq S < 1.5s \times yy$	unsatisfactory
$1.5s \times yy \leq S < 3.0s \times yy$	needs improvement
$3.0s \times yy \leq S < 9.0s \times yy$	meets expectation
$9.0s \times yy \leq S < 15.0s \times yy$	exceeds expectation
$S \geq 15.0s \times yy$	truly exceptional

The variable yy will be 3.0 to begin with, then after evaluating the 2009 annual reports, the PRC will adjust yy to complement the data.

IIID. Overall Rating

The overall rating assigned by the PRC and the department head shall be determined by the results of the three individual ratings consistent with the workload assignment and with the mission and goals of the department. Since the individual category ratings are normalized based on the category percentages (t, s, and r), the category ratings are on a common basis. The overall score of a faculty member will be the sum of the point scores in the three areas:

$$O = T + S + R$$

Next, O is divided by a normalizing factor to get O on a scale comparable to the 3 category measures. The factor is based on the percentage allocation to each category and the idea that 12 points in an area represents an appropriate target value.

$$N = (T*t + R*r + S*s)/12$$

The following breakpoints on N will be used to assign overall ratings:

average points per year O	evaluation category rating
$0.0 \leq N < 0.125 \times yy$	unsatisfactory
$0.125 \times yy \leq N < 0.25 \times yy$	needs improvement
$0.25 \times yy \leq N < 0.75 \times yy$	meets expectation
$0.75 \times yy \leq N < 1.25 \times yy$	exceeds expectation
$N \geq 1.25 \times yy$	truly exceptional

IV. OUTCOMES OF THE REVIEW PROCESS
IVA. General Expectations
Given the high quality of the SIE Department and its faculty, and the very stringent standards applied to the hiring and promotion processes, it is expected that ratings of unsatisfactory in any of the three areas will be very rare and that an overall unsatisfactory rating will be even more unlikely. A small fraction of the faculty may be identified from time to time as needing improvement, and it is expected that faculty development support from the department and university, as well as mentoring by other faculty, will assist those individuals in quickly regaining the expected levels of productivity. In the UofA College of Engineering the average faculty rating is above Exceeds Expectations in the individual areas as well as overall.

Provost Meredith Hay [rns@email.arizona.edu]
October 29, 2009
The University of Arizona is the premier research university in the State of Arizona. Our faculty, students, appointed professionals, and our staff are among the best in the country. The extraordinary quality of our degree programs, the excellence of our research, scholarship and creative arts continue to rank the University of Arizona as one of the leading research institutions in the nation. We are all stewards of this great University. We must continue to work together to ensure that the future of the University of Arizona is assured for generations to come.

IVB. Rewards
As shown in Section IIB, Performance Ratings, those faculty members with overall ratings in the meets expectation, exceeds expectation or truly exceptional categories will be eligible for available salary increases as well as for support for growth, development, and other rewards that may be made available. This applies to tenure-eligible faculty as well as to tenured faculty. The algorithm for determining allocation of these rewards will be determined by the department head subject to any external constraints that may apply.

Faculty members with an overall rating in the needs improvement category will be eligible for departmental and university support for remedial improvement of performance, and may be eligible for certain salary increases (e.g. cost-of-living raises). Those faculty receiving an overall unsatisfactory rating will not be eligible for any salary increases unless required by State law, but may receive departmental and university support for improvement of performance.

IVC. Relationship to Tenure and Post-Tenure Processes
Tenure-eligible faculty members are also required to participate in the tenure processes described in UHAP. The annual performance reviews are taken into account as part of the promotion and tenure process, but such evaluations are not determinative on promotion and tenure issues. Satisfactory ratings in the annual performance reviews do not necessarily indicate successful progress toward promotion and tenure. Progress toward promotion and tenure requires scholarly accomplishment over a period of years in the broader range of faculty responsibilities, and includes evaluation by external referees, which is not a part of the annual review process. Criteria and decisions with regard to promotion and tenure are detailed in UHAP.

For tenured faculty, the annual review is NOT intended to be a re-tenuring process; it is simply an opportunity to assess progress toward the goals outlined in Section I of this document.

Those tenured faculty who receive a rating of unsatisfactory in any of the three individual areas, or an overall rating of unsatisfactory, however, are required to participate in the post-tenure processes described in UHAP.

IVD. Expectations for the Next Review Year
Criteria for annual performance must consider teaching effectiveness, research and scholarly activity, and service. The evaluation criteria are intended to provide for recognition of long-term faculty activities and outcomes. Concentration of effort in one of the three major areas of faculty responsibilities during a particular year is permissible, and may even be encouraged. These guidelines are designed to be flexible enough to meet the particular objectives of the SIE Department, without undermining the objectives of the College or University. It is important that each faculty member have goals, assignments, and expectations for the next annual review, as agreed to according to the process specified in Article II, and that these agreements be documented in writing.

V. Conflict of interest
If any member of the PRC has a conflict of interest with a faculty member being evaluated, then that PRC member should recuse him or herself during discussion and voting for the other faculty member. A conflict of interest could mean that the PRC member would not be able to avoid giving unjustified positive *or* negative evaluations. If a person has a conflict of interest, that person shall not say, "It's OK, because I can be objective," because that is impossible. Having a conflict of interest is *not* bad. If a faculty member never had a conflict of interest, it would mean that he or she is a boring and inactive faculty member.

VI. Copyright
Each faculty member owns the copyright for his or her annual report. Submitting a report to the Department Head implicitly gives the Department Head, the PRC and the College permission to make copies of the original report. All copies of annual reports should be treated in confidence.

VII. Process for changing this process
Suggested changes to this PRP process shall be submitted by the PRC to the Department Head along with the annual evaluations in the spring. These changes shall be discussed by the faculty and approved by a majority vote. The official Systems and Industrial Engineering Annual Report and Post-tenure Review Process document shall be kept in the SIE process assets library (PAL).

Revision history for the SIE Post-tenure Review Process (PRP) document
Author: Jeff Goldberg (or perhaps Ron Askin), fall of 1997
Rev. 1 approved by SIE faculty, May 6, 1999.
Rev. 2 approved by unanimous vote of the SIE permanent faculty April 17, 2001
Rev. 3 approved by the SIE Post-tenure Review Committee March 15, 2007
Rev. 4 was approved by the SIE Post-tenure Review Committee February 2009 and was used for the evaluation of the 2008 annual reports. It was revised based on feedback after its use. It was submitted to the full faculty in May 2009. However, because the College was expected to produce a College-wide process, it was not voted on by the full faculty.
Rev. 5 discussed by the SIE permanent faculty on October 27, 2009.
Rev. 6 discussed by the SIE permanent faculty on November 17, 2009.
Rev. 7 Submitted to the SIE permanent faculty for approval on November 18, 2009.
Rev. 8 Approved by the SIE faculty January 26, 2010

Suggested structure for the SIE Process Assets Library (PAL)

The SIE Process Assets Library shall reside on the computer of the Business Manager. A copy will be kept on the Department Head's computer. The copy will be updated anytime changes are made to the master file. The SIE Process Assets Library (PAL) shall have the following structure.

Process Assets Library
     Bylaws
     Post-tenure Review Process
          Annual Report and Post Tenure Review Process
          This year's reports
               Individual faculty reports
               PTR Committee report
               Department Head letters
          Last year's reports
               Individual faculty reports
               PTR Committee report
               Department Head letters
          The year before last's reports
               Individual faculty reports
               PTR Committee report
               Department Head letters