A Rating System for Evaluating the Performance of Engineering Faculty*

W.S. JANNA†

Department of Mechanical Engineering, Memphis State University, Memphis TN 38152, U.S.A.

G. S. JAKUBOWSKI‡

Herff College of Engineering, Memphis State University, Memphis TN 38152, U.S.A.

A rating method has been devised for evaluating the performance of Engineering Faculty. Departmental Faculty worked with the Department Chairman in developing and refining a point system. A Faculty Activity Report Form was produced as well as relative weights to be assigned for completion by faculty of various activities. The point system was used successfully in determining overall departmental professional accomplishments and individual contributions toward these accomplishments. It was found that discretionary judgments on the part of the evaluator used with the point system yielded a fair and impartial evaluation. In addition, faculty evaluations revealed the specific areas in which each individual could make improvements in performance. Results were also used to determine how each faculty member placed within the Department and among faculty with the same rank.

RELEVANCE AND MOTIVATION

IN THE U.S., the Accrediting Board for Engineering and Technology (ABET) provides institutions with criteria that must be met to receive accreditation. The documents include guidelines and information relevant to different areas of evaluation. With regard to faculty, ABET gives criteria about size and competence of faculty as well as standards and quality of instruction.

Under the major heading entitled General Criteria (part C), there is a subheading on Faculty (part 1) in which it is stated (part d):

The overall *competence* of the faculty may be judged by such factors as the level of academic training of its members; the diversity of their backgrounds; their non-academic engineering experience; their experience in teaching; their ability to communicate fluently in English; their interest in and enthusiasm for developing more effective teaching methods; their level of scholarship as shown by scientific and professional publications; their registration as Professional Engineers; their degree of participation in professional, scientific and other learned societies; recognition by students of their professional acumen; and their personal interest in the students' curricular and extracurricular activities.

It is further stated (part e) that:

The engineering faculty must assume the responsibility of assuring that the students receive proper *curricular and career advising*. Those individuals responsible for and involved in advising must know and understand the engineering program accreditation criteria, as the criteria reflect the practice of engineering as a profession.

Based on these statements, it was concluded that an impartial, fair and effective method for evaluating faculty must be instituted. Such a method will have many benefits, including:

- 1. ABET criteria will be satisfied.
- 2. Faculty will get feedback on their performance.
- 3. Critical areas in which faculty are expected to perform well are clearly identified.
- How faculty stand in performance comparisons with their colleagues in the department will be made known.
- Areas in which improvements can be realized are identified.

When done properly, a faculty evaluation method will have significant positive effects.

INTRODUCTION

In September 1988, the Office of Academic Affairs at Memphis State University sponsored a seminar for all University Administrators on the 'Evaluation of Faculty Performance.' The seminar was taught by a representative of the Center for

^{*} Paper accepted 8 October 1990.

[†] Professor and Chairman. Please direct all correspondence to this author.

[‡] Professor and Interim Dean.

Faculty Evaluation and Development (1623 Anderson Ave.; Manhattan KS 66502; (800) 255-2757) and lasted two days. As a result of this seminar, of stated dissatisfaction on the part of the faculty regarding previous evaluations, and of the fact that ABET criteria clearly state a need for faculty evaluation, this study was undertaken in an effort to make an improvement. The objective here was to develop a faculty evaluation system that:

1. contained faculty input;

2. was clear enough so that faculty knew what was expected of them; and,

reflected the stated goals and mission of the institution and state educational governing authorities.

The seminar on faculty evaluation provided countless sources of information and research titles. A brief summary is given here with additional

references provided in the bibliography.

Seldin [1] discusses the curent change in the promotion and tenure decision making process in higher education. He cites several legal cases that have had a significant impact. Promotion and tenure decisions are no longer 'private affairs within departments.' Affirmative action guidelines and court scrutiny are forcing senior faculty and administrators to be able to publicly justify decisions that were once private. Seldin points out the need for a fair and unbiased faculty evaluation program. He further provides a checklist for such programs, which is reproduced here in Table 1. Although his checklist seems to have been prepared with promotion and tenure decisions in mind, a good evaluation system could be prepared by referring to the items he gives.

Table 1. Checklist for faculty evaluation programs (Seldin [1]; developed from an examination of recent court decisions and the EEOC guidelines plus a close review of current literature on the legal aspects of faculty evaluation)

- Administrators, especially department chairs, should have current and accurate knowledge about the obligations, rights, and responsibilities of colleges and universities as they relate the evaluation of faculty performance.
- The criteria and procedures in the evaluation program should be provided in detailed, written form to every faculty member.
- Multiple evaluation sources should be used and each source pursued independently.
- Evaluators should be adequately trained in the use of faculty evaluation instruments.
- Faculty members should have the opportunity to respond in writing to an evaluation with regard to its accuracy, relevance to completeness.
- Faculty members should be evaluated in accordance with established performance standards and the actual work assigned.
- The results of performance evaluation should be promptly given to faculty members.
- 8. Specific and valid reasons should be given faculty members for adverse promotion or tenure decisions.
- A formal appeal system should be part of the faculty evaluation program.
- Institutions should employ legal counsel who have current and accurate knowledge of affirmative action and EEOC guidelines.

Cook, Dodd and Sami [2] provide information for those who face the task of establishing promotion and tenure guidelines. Their results are based on responses to questionnaires sent to various institutions. The population surveyed was divided into four groups based on graduate program degrees offered and on amount of research funding generated. Seventy-three questionnaires were mailed out and only thirty-seven were returned. Summarized in the paper are responses to eleven questions dealing with:

- College guidelines for promotion and tenure
- Whether an individual must excel in teaching, research and service
- The relative importance of teaching, research and service
- The relative importance of student, alumni and peer teaching evaluations
- The minimum number of publications, if any, for promotion/tenure
- The relative importance of textbooks and publications
- The minimum time required, if any, between ranks for promotion.

Cashin [3] summarizes research on student ratings of teaching performance. He mentions that over 1300 articles and books have been written on this topic. He concludes that there are probably more studies of student rating systems than of all other faculty evaluation criteria combined.

Cashin [3] further writes that, in general, student ratings tend to be statistically reliable and valid. Also, student ratings are relatively free from bias—probably more so than other faculty evaluation criteria. Cashin states that student ratings are only one source of data about faculty, which should be used with other data sources to make up the total picture. Finally, Cashin cautions that we should not confuse a data source (e.g., students and student ratings) with the evaluators (e.g., Department Chair) who use such data in making a judgment. The paper contains an extensive list of references.

Aubrecht [4] defines effective teaching and validity, and concludes that student rating forms are reliable instruments. In another publication, Aubrecht [5] discusses the validity and reliability of student ratings of teacher effectiveness. Aubrecht states that studies comparing student ratings to ratings from alumni, teaching assistants and instructors themselves show considerable agreement. There is also great agreement when different types of students ratings are compared. Such evidence supports the validity of student ratings in evaluation of faculty.

Aubrecht [5] also states the improvements in instruction are related to the use of student ratings alone. The improvement is enhanced when the results are accompanied by an interpretation and consultation with the Evaluator. Table 2 gives a list of institutions who have developed student rating systems that are made available to interested

clients.

Cashin and Perrin [6] have performed tests and measurements on the statistical reliability of results obtained using the IDEA instrument (listed in Table 2). Their calculations show that the average item reliability is dependent on the number of raters. For 10 raters, the average item reliability is 0.69. For 20 raters, the reliability is 0.81 while for 40 raters the reliability reaches 0.89.

In other sources, the following ideas have been advanced regarding the evaluation of faculty in the

teaching area:

1. A generally accepted definition of *effective* teaching does not exist.

- Other well developed student rating instruments have reliabilities in the same range as those in the IDEA system.
- 3. Student ratings tend to be stable over time.
 - 4. Ratings by students correlate well with ratings by administrators.
 - 5. Ratings by students correlate well with ratings by colleagues.
 - Ratings by students correlate well with ratings by alumni.

- 7. Ratings by students correlate poorly with global self ratings by the instructor.
- 8. Age, gender of student, and gender of instructor show little relationship to results of students ratings.
- Level of student (freshman, sophomore, etc.), GPA, and time of day when course was offered show little relationship to student ratings.
 - High student motivation and smaller classes appear to have done some relationship to student ratings.

METHOD DESCRIPTION, HISTORY AND RESULTS

In traditional evaluations, there are two distinct bodies of information that must be gathered when evaluating faculty performance:

 The faculty member's accomplishments over the last academic year.

is fit another than 1990 and Table 2. Available student rating instruments are appointed to a public track.

OVER 1 SHIVE BUILDING BARBLEY	udent rating instruments	
System objection of the pigot aids	Source	
CAFETERIA System	Center for Instructional Services Purdue University West Lafayette IN 47907 (317) 494-510	
CIEQ Arizona Course/Instructor Evaluation Questionnaire	Division of Education Foundations and Administration College of Education University of Arizona Tucson AZ 85721 (602) 621-7832	ared with proming a good cyal your profession for the state of the sta
IAS Instructional Assessment System	Educational Assessment Center PB-30 University of Washington Seattle WA 98195 (206) 543-1170	
ICEAS Instructor and Course Evaluation System	University of Illinois 307 Engineering Hall Urbana IL 61801 (217) 333-3490	
IDEA Instructional Development and Effectiveness Assessment System	Center for Faculty Evaluation and Development Kansas State University 1623 Anderson Ave. Manhattan KS 66502 (913) 532-5970	
SIR Student Instructional Report	Student Instructional Report Educational Testing Service Princeton NJ 08541 (609) 921-9000	
SIRS Student Instructional Rating System	Computer Laboratory Michigan State University East Lansing MI 48824	
Student Description of The Student Teaching	Teaching Innovation and Evaluation Services 271 Stephens Hall University of California, Berkeley Berkeley CA 94720 (415) 642-1181	

2. An evaluation of the *quality* of each accomplishment.

It is the intention here, however, that accomplishments and quality of accomplishment are inseparable entities in the evaluation system. For example, if a faculty member publishes a paper, he/ she deserves recognition and reward. There is no grading of publications within the department. A faculty member either gets credit for a paper published in a refereed journal or he/she does not. The accomplishment automatically earns credit. If the system described here is made to work in another way, then the results will not be fair. Preconceived ideas that the Evaluator has about various faculty and various journals must be kept out of the evaluation process. The goal of an evaluation method is to properly recognize accomplishments in a fair and equitable way, without bias.

Before finding out what was accomplished, it is first necessary to determine which activities are indeed significant. Areas of teaching, research and service are considered the general areas in which a faculty member is expected to perform work that is

to be rated, rewarded and recognized.

The category labeled 'teaching' can include any number of items. On the first pass in this study, it was decided to include the following items:

Classroom teaching performance
Revamping of an existing course
New course development
Laboratory teaching performance
Laboratory development (involving design and construction of equipment)
Laboratory manual preparation
Undergraduate student advising
Major advisor for M.S. students
Committee member for M.S. students
Major advisor for Ph.D. students
Committee member for Ph.D. students
Teaching award(s) granted
Miscellaneous (items not listed above but that could be included).

Certainly other items could be added or some might be removed as necessary to fit a particular program. Possible sources of data about the individual include student, peer, and self evaluations by the Department Chair. Usually the most complete source of information is the faculty member. As shown in previous studies, student evaluations, as well as evaluations forms or rating instruments can be used to obtain an accurate evaluation of classroom and laboratory teaching performance.

The category labeled 'research and scholarly activity' can also include any number of items. In this study, it was first decided to include the follow-

ing:

Publications in refereed journals
Paper presentations (by invitation)
Paper presentations
Publications in conference proceedings
Textbook publications

Research proposals written and submitted
Research proposals funded
Equipment proposals written and submitted
Equipment proposals funded
Lectures or seminars given to peers
Refereeing papers for journals or conference
proceedings
Refereeing textbooks
Editorship
Commendations or Awards
General research participation
Miscellaneous.

Just as in the teaching category, other items could be added or some might be deleted. Information about the faculty member's contribution in each of these areas could be obtained from several possible sources: peer and self evaluations, as well as evaluation by the Department Chair. The most complete and usually most reliable source of information is the faculty member.

The category labeled 'service activities' can include any number of items. It is not to be restricted to University/College/Departmental service but could also extend to public and professional service. In this study, it was first decided to

include the following:

University committees
Department committees
Committee chair
Advisor to a student section
Member of a professional organization
Office of a professional organization
Member of a community organization
Officer of a community organization
Years of service to the institution
Gifts secured for the institution
Departmental citizenship
Consulting
Service Award
Miscellaneous.

Just as in the previous categories, other items could be added or some might be deleted as necessary. The faculty member's contribution in each of these areas can be obtained from peer and self evaluations, as well as evaluation by the Department Chair. Again the most complete and usually most reliable source of information is the faculty member.

The next step in the process of evaluating faculty is to produce a document for each faculty member to complete, called a Faculty Activity Report. The report is filled out at evaluation time (end of the academic year) and asks the individual to list in detail his/her accomplishments in each area listed above. Once the completed activity reports are collected, it is necessary to assign a relative weighting factor to every item within each category listed above. In this study, assigning relative weights was done (on the first trial basis) by the Department Chair. Subsequently a Departmental Faculty meeting was held to discuss the review. It soon became

apparent that every faculty member had his/her own idea of the relative weight of each item.

It became necessary for all faculty members in the department to work together to decide (a) what was important, (b) what should be included in each category, and (c) the relative weight assigned to each item. In one lengthy but productive faculty meeting, a final format was decided upon and a system (as described here) was successfully devised. It was understood that the evaluation was to be performed by the Department Chair who was ultimately responsible for evaluating faculty performance.

The advantages of having the entire faculty participate in such a session are many. Perhaps the most important is that each faculty member then knows and in writing just what will be considered significant in the evaluation process. Another advantage is that faculty feel as though they are contributing to the decision making process and that their opinions are important. A third advantage is that faculty have a stronger say in the direction that a Department is taking by the discussion and assignment of relative weights (e.g., publishing a paper is more important than presenting a paper and having it published in conference proceedings). A fourth advantage is that faculty worked together to achieve a common goal in a department where research interests sometimes form natural separations

A fifth advantage became evident during the review process. The Department Chair met with each faculty member individually to discuss that faculty member's performance in the three categories. Also reviewed was the faculty member's standing in the department; specifically, how that faculty member ranked among his/her peers (names of colleagues kept anonymous). Obviously, some faculty were pleased with the results and others were not. The 'high performers' were congratulated and encouraged to continue in their same patterns of productivity. The other individuals were counseled on their good and needimprovement points. The disappointment was there, certainly, but each faculty member knew exactly what his/her contribution was toward the overall goals of the department. Each resolved to strengthen weak points and to work harder. The advantage here is that those areas which need strengthening were positively identified and the faculty member could devote more time to them. The entire process appears at this point to be of significant benefit to faculty who want to improve their performance, and to the department as a whole.

As a result of the entire process described above, the Faculty Activity Report provided in the Appendix of this paper was produced. In addition, tally sheets were made up to simplify the recognition process. These are also given in the Appendix.

DESCRIPTION OF FACULTY ACTIVITY REPORT

It will soon become evident that the lists given above in the areas of teaching, research and scholarly activity, and service were changed. Some items in the original list were moved from research and scholarly activity, for example, to service. Other items were eliminated altogether. A description of each form now follows.

Faculty Activity Report: Teaching Category

Coursework is asked for as the first item in the Instructional Related Activities section. Fall and Spring course assignments are to be listed. At first Summer courses were included but it was felt that individuals who chose not to teach in the summer would be penalized. So Summer coursework was excluded.

The University makes use of a faculty evaluation form (SIRS of Table 2). Every course in engineering is to have a student evaluation in the course and the instructor. Six questions on the form pertain exclusively to the performance of the instructor. The average of these six scores is to be entered in the last column of the chart. New courses (new to the University—not new to the instructor) are to be indicated. Major redevelopment of existing courses is to be shown. Because each time a textbook is changed or a course is taught for the first time (new to instructor), however, a redevelopment is involved. So although it is indicated, it was felt that a redevelopment or revamping of an existing course would not be considered as a performance item to be credited.

Laboratory development is believed to have a significant impact on a program and so it was felt that such work (designing and building lab equipment for example) should be considered in evaluating faculty performance. Any faculty member who won a Teaching award has proven (real or imaginary) that he/she is a good teacher and so recognition in performance is warranted.

Advising is separated from the coursework categories. At Memphis State University, for the sake of efficiency and accuracy, one faculty member is assigned the task of checking out the graduating seniors. This faculty member uses each senior's file to complete a checkout sheet which ensures that each student has completed all requirements for the degree. Any advisor who neglects his/her advising duties is immediately recognized. The faculty member who completes the checkout sheets can be made responsible for reporting to the Department Chair the performance figures in the Academic Advising-Undergraduates area. The task of completing checkout sheets rotates among the faculty, and changes yearly.

The evaluation of faculty in the Academic Advising-Graduates area is more definite. Individuals who serve on M.S. and Ph.D. committees and who serve as major advisors are appropriately credited. There are certain restrictions, however.

Serving on a M.S. committee is not credited to the faculty member until the student graduates or is in his/her final semester. Serving as a M.S. thesis advisor has a two year ceiling in performance credit. Serving on a Ph.D. committee is believed to be important but is given minor credit. Serving as a major advisor to a Ph.D. student is given comparatively major credit.

As in most information seeking operations, all data may not be conveyed. Therefore, it is appropriate to include an area called Additional or Supplementary Information. Faculty can enter any further data desired. Awarding of performance credit here is done at the discretion of the Department Chair, although some faculty believe there

should be a maximum.

Faculty Activity Report: Research and Scholarly

Activity Category

Publications in Refereed Journals is the lead area in this category. In the early discussion stages, there was a request for a list of 'acceptable' journals but none was made up. It was felt that if a journal editor uses referees considered to be peers to the author, then the publication properly earns performance credit. There was no effort, nor will there be, to downplay certain journals and discount various works.

A distinction is made between the submission/ acceptance of a paper and its actual publication. This distinction was made because of the sometimes lengthy turnaround time associated with the publication process. Thus a paper prepared and submitted/accepted would receive some credit. Actual publication would receive further credit, which may be given in the subsequent academic

The next area in which faculty should be recognized is in Papers Presented. Several subcategories

with various credits were identified:

a. Paper presented by invitation at a national

b. Paper presented by invitation at a regional conference

c. Paper presented at a national conference (not an invited paper)

d. Paper presented at a regional conference

e. Paper published in the conference proceedings

Further, a distinction again was made between accepted for presentation and actual presentation.

Textbooks, Reports appear as the next area. A textbook or a report earns credit in the year it is published. An example of a report would include a substantial work submitted to a company in lieu of a publication if the work is proprietary.

The next area is Research Proposals Written, Submitted, Funded. This area is included to award faculty for any and all research proposals that were prepared and submitted to a funding agency. A distinction between external and internal (University) funding sources was made. The objective is to

encourage the writing of proposals. If the proposal is funded, the credit earned is tied to the amount funded in the year that the proposal is announced as funded. Thus funding provided next year but awarded this year earns credit this year and only this year. Moreover, a minimum and a maximum were placed on the credits earned. Equipment Proposals Written, Submitted, Funded is the next area. It is treated in much the same way as research proposals without the internal/external distinction.

Lectures and Seminars Given to Peers is the following area. The intent is to recognize the giving of a lecture of seminar on a research related topic but not for a talk given to a local civic organization, for example. The spirit is often clearer than the letter of the rule. Discretion of the Evaluator is required to ensure that a fair, systematic and consistent

application of the intent is made.

Reviewing Activities includes a review of papers and service as a journal editor. A textbook review is usually compensated by a publisher and so it does not appear here as an item that earns credit.

Commendations or Awards for Excellence in Research is the next area. It was felt that an excellent researcher that earns an award calls attention to the institution and should therefore be recognized within his/her own department.

As mentioned in the teaching category, all appropriate information might not be conveyed. Therefore an area called Additional or Supplementary Information is included here. Faculty can enter any further data desired, and awarding of performance credit here is done at the discretion of the Department Chair, subject to a maximum.

Faculty Activity Report: Service Activities Category Committee work falls under this category. Committee Participation-University and Committee Participation—Department are the first two areas. These include any committee without the obvious argument that some committees require less time than others. There is additional credit earned if the faculty member chairs any of these committees.

Student Sections Advised is included to recognize a faculty member who serves as advisor to the ASME student section, for example. Faculty should be encouraged to serve in this way in light of the number of organization that now exist: ASCE, ASME, IEEE, NSBE, SAE, SWE, ASHRAE, etc.

If a faculty member is a member of a Professional Organization, recognition is given in the next area, subject to a maximum. When a faculty member can obtain Gifts (of equipment for example) for the institution or the department, recognition should be made.

Service Awards is the next area. It was felt that someone who earns such an award brings distinction to the institution and accordingly should be recognized within his/her own department.

As mentioned in the two preceding categories, all appropriate information will probably not be conveyed. Therefore an area called Additional or Supplementary Information is included so that

faculty can enter any further data desired. Awarding of performance credit here is done at the discretion of the Department Chair, subject to a maximum. The review of a textbook might be entered and credited here.

Notable changes from the original lists are worth mentioning. The following items have all been excluded:

Revamping of an existing course

Reviewing of a textbook

Membership in community organizations

Years of Service

Departmental citizenship (a time consuming topic of discussion)

Consulting for any monetary compensation.

Evaluation of Faculty Activity Reports: Tally Sheets

Once all forms are completed and returned to the Department Chair, tally sheets are filled out for each faculty member. Tally sheets contain the relative weights for each area within each of the three categories. As discussed above, the relative weights were decided upon in a departmental meeting. The tally sheets are given in the Appendix of this paper.

A tally sheet has been prepared for each category: teaching, research and scholarly activity, and service. Once credits are calculated, additional weighting factors are applied. (These additional weighting factors are not necessary but had to be used in our evaluation because of previously

agreed upon University requirements.)

The tally sheets are used to determine Individual Productivity Points for each faculty member. The Productivity Points for all faculty were then summed to obtain the Total Productivity Points for the department. Each faculty member's contribution to the total is defined as the ratio of Individual Productivity Points/Total Productivity Points. This ratio was used with great success to calculate merit increases for all faculty.

SAMPLE CALCULATION

Suppose, for example, that a department is given \$10,000 for merit increases, and that the department consists of five faculty with the Individual Productivity Points given in column 2 of Table 3. The points earned are summed to obtain Total Productivity Points of 1730. Faculty #1 would receive 270/1730 = 0.156 of the total amount of money provided to the department for merit increases, in this case \$10,000. So Faculty #1 would earn a merit increase of \$1560 with similar calculations for the others, as listed in column 3 of Table 3. In this way, the individual is rewarded for performance with an increase that is in direct proportion to his/her contribution to the overall departmental productivity.

It should be noted that there are alternative methods for using these figures in determining merit increases. Combinations of figures that include across-the-board increases can be devised.

Table 3. Summary of how earned productivity points are used to determine individual salary increases

Faculty	Points earned	Recommended increase
#1	270	1560
#2	450	2601
#3	330	1907
#4	290	1676
#5	390	2254

CONCLUSIONS

The Faculty Activity Reports and Tally Sheets were used at the conclusion of the 1988/89 academic year to evaluate faculty performance in the Department of Mechanical Engineering at Memphis State University. The method was lengthy and time consuming but yielded results that were highly useful. The objective of making an improvement over the previous evaluation system was realized. It is hoped that the reader will benefit from this study when participating in an evaluation program.

REFERENCES

1. P. Seldin, Court Challenges to Tenure, Promotion, and Retention Decisions, Idea Paper No. 12, Center for Faculty Evaluation & Development, Kansas State University (1984).

2. E. E. Cook, C. Dodd and S. Sami, Promotion and Tenure Policies in U.S. Engineering Schools, Engng

Ed. pp. 750–752 (April 1979).

3. W. E. Cashin, Student Ratings of Teaching: A Summary of the Research, Idea Paper No. 20, Center for Faculty Evaluation & Development, Kansas State University (1988).

4. J. D. Aubrecht, Are Student Ratings of Teacher Effectiveness Valid? Idea Paper No. 2, Center for Faculty Evaluation & Development, Kansas, State University (1979).

5. J. D. Aubrecht, Reliability, Validity and Generalizability of Student Ratings of Instruction, Idea Paper No. 6, Center for Faculty Evaluation & Development, Kansas State University (1981).

6. W. E. Cashin and B. M. Perrin, 'IDEA Technical Report No. 4: Description of the IDEA Standard Form Data Base, Idea Paper No. 4, Center for Faculty Evaluation & Development, Kansas State University (1978).

Additional References

R. A. Arreola, Strategy for Developing a Comprehensive Faculty Evaluation System, *Engng Ed.* 239–244 (1979).

G. D. Borich and S. K. Madden, Evaluating Classroom Instruction: A Sourcebook of Instruments, Addison-Wesley, Reading MA (1977).
 L. A. Braskamp, D. C. Brandenburg and J. C. Ory, Evaluating Teaching Effectiveness: A Practical Guide,

Sage, Beverly Hills CA (1984).

J. A. Centra, Determining Faculty Effectiveness: Assessing Teaching, Research, and Service for Personnel Decisions and Improvement, Jossey-Bass, San Francisco (1979).

K. O. Doyle, Student Evaluation of Instruction, D. C. Heath, Lexington MA (1975).

G. French-Lazovik, editor, Practices that Improve Teaching Evaluation: New Directions for Teaching and Learning, Jossey-Bass, San Francisco (1982).

D. R. Lewis and W. E. Becker, editors, *Academic Rewards for Higher Education*, Ballinger, Cambridge MA (1979).

C. M. Licata, *Post-Tenure Faculty Evaluation: Threat or Opportunity*, ASHE-ERIC Higher Education Report, No. 1, Washington DC (1986).

R. I. Miller, Developing Programs for Faculty Evaluation, Jossey-Bass, San Francisco (1974).

J. Millman, editor, Handbook of Teacher Evaluation, Sage, Beverly Hills CA (1981).

P. Seldin, Successful Faculty Evaluation Programs: A Practical Guide to Improve Faculty Performance and Promotion/Tenure Decisions, Coventry Press, Crugers NY (1980). (Contains examples of point systems.)

P. Seldin, Changing Practices in Faculty Evaluation: A Critical Assessment and Recommendations for Improvement, Jossey-Bass, San Francisco (1984).

N. Whitman and E. Weiss, Faculty Evaluations: The Use of Explicit Criteria for Promotion, Retention and Tenure, ASHE-ERIC Higher Education Report, No. 2, Washington DC (1982).

APPENDIX Memphis State University Department of Mechanical Engineering Guidelines for Merit Evaluation

Each faculty member will undergo a yearly review with the Department Chairman, and will be rated in three *basic areas*:

Teaching

Research and Scholarly Activities

Service

Faculty are asked to compose a Summary of Activities form, which is attached. (Faculty may wish to also compose a portfolio consisting of supporting documentation, but this is not necessary.) Examples of items that are asked for on the Summary form include, but are not limited to:

• Student evaluation of classroom performance

Laboratory teaching performance

 Titles of papers that have been published, presented and/or published in conference proceedings

Titles of proposals written, submitted and/or funded

List of service activities (including consulting activities)

List of graduate student advisees

Any other supporting documentation deemed appropriate by the faculty member

The evaluation period is to begin March 31 and end 12 months later. The Chairman will use the completed forms and rate each faculty member on a scale from 1 to 100 in subcategories of the three basic areas and the supplementary categories. To arrive at a merit score, the rating in all categories

will be totaled. To arrive at merit increase figures, total points for all faculty will be divided into the percentage (not the actual dollars) available for merit to yield a % increase per point. An individual's merit % increase is his/her total points × the % increase per point quotient. In comparing results of such calculations, it is possible for an individual with a high percentage increase to obtain less merit dollars than another individual with a lower percentage. (This result also arises, but more drastically, if total points are divided into actual dollars instead of percentage available.)

In the case where a faculty member is to receive an adjustment, the amount is not to be subtracted from the dollars available to the Department before the % increase per point quotient is determined. Extra departmental funds must be made

available.

Faculty members will be informed of their rating along with reasons for it. Anonymous ratings of other faculty will also be made known so that each individual knows his/her rating within the department, both within the faculty member's rank and within the department as a whole. Who has earned which rating figure will not be made known by the Department Chair. If the faculty member disagrees with the rating, he/she will have 10 working days to provide more information or to resolve the situation with a re-interpretation of the data. If dissatisfaction still exists or further review is necessary, the Advisory Council will be consulted. The Advisory Council will consists of the tenured

full Professors in the department. In case one of the tenured full Professors is involved, an alternate member will be selected as a temporary replacement, from another Department if necessary. The Advisory Council will review the case and make recommendations to the Chair. The ultimate responsibility of assigning merit monies rests with

the Chair and the Council will serve only in an advisory capacity.

The forms that follow are to be used in the merit evaluation process. Please complete the forms and have them returned by March 31. Feel free to consult the Department Chair on any matter.

e Teachang

Research and Scholarly Activities

E. Equipment Prop. Department of Mechanical Engineering

. Instruction	(Years of Service to MSU) structional Related Activities						
A. Coursewo	ork						
3		C Title		Evaluation			
Semester	Course Number	Course Title	Credit	Score ¹			
Fall	- Seminars Given		sen ation, dat	given)			
Spring							
in By g s Invitation	f nages; Published Proceeding			. Papers			
¹ Evaluation score B. Laborato	e consists of the average of the Development	f release was internally or externally support fitems 1, 2, 4, 18, 23, 25, 26 of the SIRS form (New equipment, facilities, methods, man					
¹ Evaluation score B. Laborato	e consists of the average of the property Development	f items 1, 2, 4, 18, 23, 25, 26 of the SIRS form	uals, etc.)	ponsor)			
B. Laborato C. Teaching	e consists of the average of the property Development	f items 1, 2, 4, 18, 23, 25, 26 of the SIRS form (New equipment, facilities, methods, man	uals, etc.)	ponsor) k			
B. Laborato C. Teaching D. Academi	e consists of the average of the Average of the Awards:	f items 1, 2, 4, 18, 23, 25, 26 of the SIRS form (New equipment, facilities, methods, man	uals, etc.)	ponsor) ,			
B. Laborato C. Teaching D. Academi	e consists of the average of the ave	f items 1, 2, 4, 18, 23, 25, 26 of the SIRS form (New equipment, facilities, methods, man	uals, etc.)	ponsor) _k oudixoT ,			
B. Laborato C. Teaching D. Academi E. Academic Major Advi	Awards: c advising-Underg c advising-Graduat isor for M.S. Students: exam Committee Member	f items 1, 2, 4, 18, 23, 25, 26 of the SIRS form (New equipment, facilities, methods, man raduates te Students	and title and s	Textbook 1 2. 1. Researc			
D. Academic Major Advi	Awards: c advising-Underg c advising-Graduat isor for M.S. Students: exam Committee Member	f items 1, 2, 4, 18, 23, 25, 26 of the SIRS form (New equipment, facilities, methods, man raduates te Students r M.S. Students:	and title and s	Textbook 1 2. 1. Researc			
D. Academi E. Academi Major Advi Thesis or Example 1	Awards: c advising-Underg c advising-Graduat isor for M.S. Students: exam Committee Member	f items 1, 2, 4, 18, 23, 25, 26 of the SIRS form (New equipment, facilities, methods, man raduates te Students r M.S. Students:	and title and s	Textbook 1 2. 1. Researc			

II. Research and Scholarly Activities

	itional format: title, author(s), journal, volume, number, yea			
1.	(Uem or solving to Play)			
	d Activities	elate	tional R	Instruc
2			ALUNS	L Cours
Evaluation	dunder Course Title Credit	Аэгик	0 1 1	Semeste
3.				118
4.				
B. Papers P	resented (title, author(s), meeting, year, number of pages, regional or national meeting.)	1	ished in eedings	By Invitation
1.	single entry: e.g. 4371/6371 d for the first time.	e se se e offer	asuno lauri law cours	ist all dual Indicate (*)
2.	instructor for the first time. priest of existing course. priests and if release was internally or externally supported.	d inigi develo appin	Major re-	ndicate (**) Indicate (**) I <u>ndicate cele</u>
	he average of items 1, 2, 4, 18, 23, 25, 26 of the SIRS form.	ists of	core consi	Evaluation
3.	opment (New equipment, facilities, methods, manuals, etc.)_	level	itory D	B. Labor
4.		rds:	ng Awa	C Teachi
C. Textbook	s, Reports (title, author(s), publisher, year)	gniain	mic adv	D. Acade
1.	***************************************			- A - 7
2	3206-2600 9 W. Internet and August 1990 1990 1990 1990 1990 1990 1990 199	9	7 90 70 70 70 70	
D. Research	Proposals Written, Submitted, Funded principal investigator(s), funding agency, amount)		Amount	
1.				
2_	Students: D. Students:		dvisor fo	Major A Comm
-				121.5 A C
3.	lementary Information:	dane	10 15110	R. Addit

	s Written, Submitted, Funded pestigator(s), funding agency, amount)	Amount	
1.			
= x2	Thesis or Exam Committee M	lember Augon	(rad)
2.			
- X5	Ph.D. Major Advisor		
•	vised:	it Sections Adv	tude
3. Tynn li nidhal l	iiz atidasəli nastifirizmalıidə ilil offices held	ssional Organ	Profe
	es Given to Peers (title, audience, time in p		given)
otal wgi factor 1.			
2			
3.	Undergraduate Student Advi	sing	
	Jndergraduate Advising total :	ecured for MS	2 -017
G. Reviewing Activitie			
	d (title, author(s), journal)		
Reviewed time, authorish Reviewed Activities	plementary Information: (e.g., Textbooks . vijvitzk vita	idue se subi	Addi
2. Journal Editor (title of jo	numal) Publications in Refereed Jour	nals (submitte	ud)
H. Commendations or	Awards for Excellence in Research (A	nati	nsor)
x3	Paper Present by Invitation (A	vational; æcej	Hed)
I. Additional or Supple	ementary Information:	vational; pres	ented)
#x2	ave Classroom Performance (8) noestivni yd reserver ager	légional, accej	rted)
=x2		Paulanal Rose	
II. Service Activities			ented)
II. Service Activities			
A. Committee Particip			
A. Committee Particip		r involved; other	membe
1. Committee Particip	pation-University (title, chair, hrs/semester	r involved; other	membe
1. 2	pation–University (title, chair, hrs/semester	r involved; other	membe
1. ×2 2 ×1 3. ×3	pation–University (title, chair, hrs/semester	r involved; other	membe
1. = x2 2	pation—University (title, chair, hrs/semester	r involved; other	membe
1. × 2 2 × 1 3. × 3	pation–University (title, chair, hrs/semester	r involved; other	membe
1. = x2 2	pation—University (title, chair, hrs/semester	national, accertification involved; other acceptance in ac	membe

B. Committee		Department (title, chair, hrs/semester involved; other members,
1.	a Referent jou	en alo
2	ner tormac rate, a	adhor(s), journal, colume, number, year, pages?
3.	And Control of the Co	
4.		
C. Student Section	ons Advised:	
D. Professional	Organization	s (name of organization and offices held within, if any)
1.		
2	orthogen of the source	THE PART OF THE PA
3.		
4	metalah terleta mendam	(a) married was a section of married (Published In 1) Burn
E. Gifts Secured	for MSU:	astional meeting.) Proceedings Invitatio
F. Service Awar		Reviewing Activities
• Teaching	earch (Award title	2. Journal Editor (title of Security) L. Cosmiendations of Awards for Excellence in Res
G-Yextbooks, Re	× 40 / 2110	Classroom Performance
	x 40/avg	Classroom refformance
2 -	x 4	Lab Development
		Submitted, Funded seltvities activities
(title, prin	×7 teamester	New (to MSU) Course Development
=	×3	Lab Manual Preparation
=_	x 3	Teaching Award (actually awarded)
= 3 n	nax	Misc
total wg	= Direct	Instruction total

culty Me -(stq 0)	mber, Ran	x5) beb	Thesis Major Advisor (2 year maximum)
F gnidses	mitted ^o	Vritten & Sub 2 x 2 mded (min 1	Thesis or Exam Committee Member (upon grad)
	=		Ph.D. Major Advisor
			Ph.D. Committee Member
total		= Grad	uate Advising total
orrene s is	_=_	x3	Undergraduate Student Advising
total		= Unde	ergraduate Advising total
• Kese	arcn an	a Scholarly	Activity Management Ax
Rese	arcii ari	a octionarry	
	=	x5	Publications in Refereed Journals (submitted)
	=	x 5	Publications in Refereed Journals (published)
o (ribbda	ib#¥ed 1	ed x3 10 1	Paper Present by Invitation (National; accepted)
	=	x 2	Paper Present by Invitation (National; presented)
ecommenc	lations	x2 roll	Paper Present by Invitation (Regional; accepted)
	_ =		Paper Present by Invitation (Regional; presented)
	(4 pis n		Paper Present (no Invitation; national; accepted)
	141 =		Paper Present (no Invitation; national; presented)
			Paper Present (no Invitation; regional; accepted)
	d To≟el		Paper Present (no Invitation; regional; presented)
ntire Faci	illy Total		
	=		Publications in Conference Proceedings (National)
	=_		Publications in Conference Proceedings (Regional)
		x 10	Textbook Publications
01100.073	_=_	X 3	Reports (sex) = Service total
	=_	x 5	Research Proposals Written & Submitted (external)

	= x 2	Research Proposals Written & Submitted (internal)
	= \$/5,000 per year	Research Proposals Funded (min 5 pts; max 20 pts)
2 //	= x 3	Equipment Proposals Written & Submitted
1,001	= \$/10,000 per year	Equipment Proposals Funded (min 1 pt; max 5 pts)
Burneline.	= x 1	Lectures or Seminars
Simula	= x 1/paper	Refereeing Papers for Journals or Proc.
l. Pinte	= x 5	Editorship
	= x 3	Commendations or Awards
	= 3 max	Misc
total	wat factor	ch & Scholarly Activity total or anialybA elaubang ebnU =
		<u>Items</u>
n. Addi	= x4	University Committees 18 Office Bus 19 18 18 18 18 18 18 18 18 18 18 18 18 18
	ed journals (submitte • • • • • • • • • • • • • • • • • • •	Departmental Committees
• Teacl	tation 8x tional a= co	Committee Chair (Chair or member but not both)
nted)	tation (National; prese	Advisor to Student Section(s)
		Member-Professional Organization (4 pts max)
ented)_	vitation 8 x ational; pres	Officer-Professional Organization
	= \$/1,000	Gifts Secured for MSU (3 pts min)
(gional)	erence Proceedings (Na EX = erence Proceedings (Ke	Service Award (actually awarded) = x 2
	= 3 max	= x 10 Textbook Publication
total	x = Servic	e total non factor of the state

dudents to the resides mesourement techniques	Contracting the of the o	Summary Sheet
Faculty Member, Rank	Date	are held in small gro
give students at Good DOO Velo I BIJ DIV	Of Same Rank	2 Islandi
Teaching Total	Of Department	mple problems are
	Acute and Interface of the Acute of the Acut	has white the folio
Comments: O acquire otherwise In normal practice.	(i) it extremes the new	territoria de la
the lecturer will cover the syllabus with lectures by in a broad cope and an principles, and	(ii) it helps to promote	JA HAWPEPPE
	Of Same Rank	
Research Total		ent from another. E
	Of Department	own pace, someu
Comments:		
sessions, Varenas vass plandera internetis (25 epts et discussed maxingum peruspedion is utenuties).		nod of teaching is o
ectures. The lecture is usually pitched at the level	the teacher's time it it	involves repetition
	materials [4]. The suggest OITOUG	
Service Total	Of Same Rank	Students and their to
opinionalst sutthensp would sprud uce bletter spartiel	Of Department	
pation and discussion.		
Comments: 2. TEACHING-LEARNING PROGRAM	separated by the perfore	sherprachhenen kar
Every student learns by himself hersen, at his	Students by the success or	a depositioned should
	Of Same Rank	
Combined Total		lys beams a muor
	Of Department	ents entre entre la
Recommendations:	tes estatilities i parine	
and the base of the second constitution and	Contract the Contract of	Alien reserved ma
Loney Comments of the Comments		Carr
Merit Calculation (% o	of available Raise \$)	the over all well-had
% Available	THE ROOM STORY A LOOK SET	
Entire Faculty Total = %/Point	agoniquense Tamb <u>igo</u> no El polorisen	
productions and an element of the state and street tutoria	%/Point Salary	
Combined Total = → ⇒	_xx	and basins ≡ nor 1
Assettes the tradetonal server to the approach	composition of the state to	the state of the
		Recommended Salary
		Increase