

# Teaching Evaluation in the Physics Department

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## Preamble

The instruction of both undergraduate and graduate students is an important function of the faculty of a research university. It is therefore incumbent upon us to foster and encourage effective and inspiring teaching in our department, and whenever its quality falls below its fullest potential, to improve it. There are many methods of doing this: some involve working with and helping individual faculty members who are aware of deficiencies in their own procedures, such as salary raises and promotions. All such methods, within limits set by the amount of effort and time the faculty considers useful and efficient to devote to them, ought to be pursued. However, this document addresses itself solely to the question of how to evaluate the teaching of individual faculty members for the purpose of salary determination or promotion. That is not to imply that other, less judgmental, methods to improve the teaching of faculty are less important or should not be pursued. Of course, they should be.

It is clear that if salary and promotion decisions for an individual are to be based in part on his or her performance as a teacher, such decisions, to be fair, require reliable information about this performance and should be based as much as possible, on uniform procedures. It is therefore necessary to have systematic and dependable methods in place for evaluating the quality of the teaching of the faculty.

Our recommendations are based on four kinds of consideration and data: the first is information on procedures used for teaching-evaluation gathered by our committee from other departments at this university and from physics departments elsewhere; the second is the set of answers to an extensive questionnaire that was sent to the physics faculty last fall after discussion at a faculty meeting; the third is the collective judgment in our committee; and the fourth is our lack of inclination to recommend procedures that require too much time or effort on the part of the faculty. We are of the opinion that procedures that are too burdensome, even if initially approved in a fit of enthusiasm, will soon fall into desuetude. (A prime example is our recommendation that only the courses taught by faculty below the rank of full professor be evaluated by visitation; our only reason for this is that class visitations of all professors would be too time consuming to implement).

We are aware that the evaluation methods we recommend are not infallible and that some of them are not universally approved in this department. They do, however, have the backing of substantial pluralities, at least, of the physics faculty as evinced by the answers to last fall's questionnaire.

Our recommendations require no new standing committees. The only new committee that is implied by them is an ad hoc committee to design a number of new questionnaires recommended under items 2, 3, and 4.

It is the intention of our committee that if the physics faculty votes affirmatively, the following recommendations be implemented as standard procedures in the department. Individual faculty members who object to some of its provisions have the prerogative of refusing to allow the distribution of teaching-evaluations forms or class visitations; they will then have to be judged on the basis of alternative data that may be less reliable and less convincingly communicated to others.

## Recommendations

**1. Course Materials:** A teaching portfolio can provide evidence that a course is well-structured and thought out, and that it provides an appropriate level of coverage and requires a suitable effort on the part of the students. Every faculty member should be expected to submit to the chair, for use by the EC, a copy of relevant materials distributed to students in every course he or she teaches. This should include course outlines, homework problems, examinations, and other materials deemed useful by the instructor. Some of the materials could also document significant innovations in either course content or methodology.

**2. Class Visitations:** Peer judgment by means of class visitations is one of the customary ways of evaluating a faculty member's teaching quality, and we believe in the value of this procedure as a part of the process of teaching evaluation.

(a) Every course taught by a faculty member below the rank of full professor who has been a member of the department for more than a year should be visited several times (at least twice) each year by several designated colleagues whose judgment of the teaching quality of the evaluatee should be transmitted to the chair and the EC. A suitable check-off form to be used by the visitor as a minimal part of this evaluation should be designed by an appropriate committee. A more extensive report on the visitor's impressions would be desirable.

(b) Every new faculty member who joins the department (including full professors) should, during the first year, also have class visits by at least one colleague. However, unlike under item (a), these visits should be solely for the information and benefit of the faculty member, and no evaluation or judgment should be sent to the chair of the EC.

The visitors under item (a) should be members of the ad-hoc committee set up for the individual for that year. (The ad-hoc committees should be appointed early in the fall, so that visitations are not put off until spring). The visitors under item (b) should be members of the Improvement of Teaching Committee. All classroom visits should be announced ahead of time.

**3. Teaching-evaluation Forms:** Teaching-evaluation forms filled out by students, if designed appropriately and read in the context of other, similar courses, provide useful additional information and thus form a valuable partial tool for the assessment of teaching quality. Three or four distinct *short* forms should be designed by a designated committee: one for large courses for non-physics majors, one for non-lecture laboratory courses, one for lecture courses for undergraduate physics majors, and one for lecture courses for graduate students (the last two might be combined). Instructors should be free to add a number of questions to the forms used in their own courses. Appropriate versions of these

forms should be handed out and collected in *every* course near the end of *every* semester by a secretary, and summarized (in the sense of summing the scores and copying all student remarks) by departmental staff. (Instructors will be asked to set aside a fifteen-minute interval for the filling out of these forms by the students near the end of each course.) After the final grades in the course have been announced, one copy should be given to the instructor, and one should be retained for use by the chair and the EC.

**4. Interviews and Questionnaires:** Much additional information on the teaching quality of the faculty can be obtained by a number of supplementary means.

(a) A group interview with the graduating physics majors should be conducted by the chairperson each spring, both with a view toward eliciting opinions on the quality of individual instructors of undergraduate classes, and toward improving effectiveness of the curriculum and other aspects of undergraduate education.

(b) When undergraduate or graduate students withdraw from a course, they should be asked (in the student-services office, where they have to go for a needed signature) to fill out a brief form (to be designed by the aforementioned ad-hoc committee) asking the reason for the withdrawal. (They need not be required to give their names). These forms should become part of the instructor's teaching file, and one copy should be given to the instructor.

(c) In order to obtain additional information on faculty members' teaching effectiveness on the graduate level, which of course includes the individual supervision and assistance of Ph.D. candidates, an appropriate questionnaire should be sent each year to all graduate students, asking them primarily to list (with some explanation) those individuals (including non-faculty) who were of particular help and usefulness to them, and those who they regarded as a hindrance. Ph.D.s who have fulfilled all their requirements (including their oral) should be expected to fill out this questionnaire before leaving.

It is not the intent of this recommendation to base immediate judgments of teaching effectiveness on praise or complaints coming from individual students. Judgments should be based on an accumulation of evidence over the years. Since the relation between a student and his or her Ph.D. supervisor is very personal and sensitive, it is clear that the information gathered from graduate students on matters that might touch on that relation has to be handled with great caution.

(d) We recommend that either the chair of the Improvement of Teaching Committee meet annually with graduate students who have passed their Qualifying Exam, to find out if they have problems, either with their supervisors, or in other respects with regard to their graduate careers. These meetings may be held with students as a group or, upon request, individually. In addition to improving the students' morale and performance, this might also elicit, over the years, information on the teaching-effectiveness of individual faculty members.

(Approved by faculty vote – November 1991)