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Creating a Peer Review of Teaching Process to Enhance Instructor Feedback in Engineering Education

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Creating a Peer Review of Teaching Process to Enhance Instructor Feedback in Engineering Education

This paper describes the process of developing and piloting a peer review system offering faculty opportunities for varied, robust feedback on multiple aspects of teaching. The goal is to enhance teaching effectiveness of our faculty and serve as a model for other engineering departments. A note about terminology: While we use the term "peer review of teaching" (PRT) throughout, "comprehensive faculty teaching development" is a more accurate descriptor of what the program we have developed has evolved into during the pilot phase. By describing in detail our process, we aim to provide a flexible guide by which other units might adapt and develop similar programs to help faculty enhance their teaching. We show that program success—as far as we can see it in these early stages—is characterized by a focus on understanding stakeholder—especially instructor—needs around teaching, embracing a process that distributes power and leadership throughout planning and decision-making, investing organizational support through time and money, and assessing progress and goals regularly.

To do this, we first situate our peer review of teaching program within the broader context of our department's formation and existing models for evaluation of teaching. We then show the significance of identifying stakeholder needs in our discussion of how we initiated planning and development of the program and how we addressed institutional culture and constraints on stakeholders. We then describe detail how we used this information to plan a timeline, develop a policy, and coordinate within our department to implement and assess the new program. We conclude by discussing our next steps and providing recommendations for faculty and administrators interested in creating a development-focused peer review of teaching program in their units.

Situating Evaluation of Teaching in a Department of Engineering Education

Our Department of Engineering Education ("department") was officially established in 2015, having previously operated as a center within the College of Engineering at the Ohio State University (OSU). The department formed with the mission to advance the engineering profession with a focus on student success through three primary approaches: (1) "developing and delivering state-of-the-art, innovative, multidisciplinary engineering courses and programs;" (2) "modeling and advocating scholarly, evidence-based teaching within the College of Engineering;" and (3) "by integrating pedagogical discovery, practice, and dissemination through world-class engineering education research." [1]. This mission encapsulated our goal to be a model of developing scholarship on teaching and learning, performing high-quality engineering education research, and informing our pedagogical approaches with that scholarship.

Over the past two decades, there has been growing interest and increasing focus on teaching within college campuses throughout the country. External demands for improved quality in teaching have come from private and public sectors, accrediting bodies, and state governing boards. In particular there has been a call for evidence-based teaching practices that are better aligned with student learning and outcomes [2]-[4]. Voices within higher education have focused their attention on teaching, based, at least partially, on concerns that the academic culture has

become focused on research at the expense of quality teaching [5],[6]. Hence, there have been attempts to elevate the status and improve the effectiveness of teaching within the academy, and Centers for Excellence in Teaching have appeared at colleges and universities throughout the country. Other forces, such as changes in information and technology also have impacted teaching. As a result, teaching and learning, which were once considered the private domain of an individual faculty member, have more and more become public territory.

Although end-of-term student evaluations of instruction ("SEIs") are a near universal method of evaluating faculty teaching effectiveness, some research demonstrates little correlation between teaching effectiveness and the scores an instructor receives on these instruments [7]. SEIs are a flawed measure of teaching effectiveness, not least because of bias against women and people of color [8], [9]. Faculty crave meaningful feedback on their teaching beyond that provided in SEIs [10]. Isolated observations of teaching are one method of reviewing instructors, but are also limited because they represent information about a single instance of instruction, and do not fully capture the full extent of teaching practices and instructional materials and activities that are of interest [11].

The problems with these methods of assessing quality of instruction demonstrate the need for a system focused on instructor development. We sought to develop a system offering faculty opportunities for varied, robust feedback on multiple aspects of teaching. By drawing on existing models and discussing goals with staff from the university's teaching center, a system of formative options was created for reviewing instruction (across all faculty ranks) to empower faculty to identify and address gaps in their abilities as instructors. An additional goal was to create one unified faculty development system that addressed the needs of all faculty, regardless of rank, including graduate teaching assistants, lecturers, professors of practice, and tenure track faculty. At the same time, we also sought to address the needs of faculty who must document peer review of teaching engagement for the purposes of promotion. As such, we also needed to include summative review options that would allow faculty to demonstrate the trajectory of their teaching development over time, but through a narrative written by faculty members and discussed with their supervisors during their annual reviews.

To address these institution-specific problems and goals, and to join the larger conversations happening about them at the national level, a departmental committee was formed to develop and oversee a comprehensive peer review of teaching program. The specific charge of the committee was to explore different models for peer review of teaching, propose a process, and pilot an initial implementation of that process. Committee members included faculty of all ranks and tracks (i.e., tenure, practice, and lecturer) as well as administrators (e.g., associate chair faculty and program assistant staff). We also welcomed two graduate students pursuing doctoral degrees in engineering education as we move into program assessment and began identifying opportunities for research. Given the focus on creating a continuous process for programmatic teaching improvement, the committee developed resources, forms, and administrative documents as well as related research questions. Data collection processes were defined to provide both programmatic assessment feedback as well as more generalizable research findings.

Initiating Planning and Development

The director of the university center for teaching development provided us with a well-developed policy document originally developed and implemented by the university's former Department of Physical Activity and Education Services. Embracing that department's ethos of ongoing engagement to improve teaching, the model outlined a set of formative options for enhancing teaching through peer review [12]. This document became the starting point for our own policy document. Our next task was to determine how we could adapt the model to meet the unique needs of the department.

To do this, we had to determine stakeholders and their needs and roles, explore the institutional and cultural context surrounding the program, and, once we identified these, work within the constraints of the system. In this section, we describe each of the categories of stakeholders, addressing some of the institutional boundaries and constraints associated with developing an effective peer review of teaching system.

Stakeholders we identified included:

1. Stakeholders who would be using the system to improve their teaching. This included faculty of different roles and ranks, including:
    a. Tenure Track Faculty
    b. Clinical Track Faculty (also known as professors of practice)
    c. Lecturers (also known as Associated Faculty at our institution)
2. Stakeholders who need to evaluate the teaching of faculty. This included:
    a. Departmental Supervisors of Lecturers
    b. Department Chairs/Heads
    c. College Leadership: Deans and Curricular Associate Deans
3. Stakeholders invested in the quality of teaching, including:
    a. ABET and other institutions involved in accreditation of educational programs
    b. Industry professionals, alumni, and other external stakeholders invested in the quality of teaching, including the department's external advisory board
    c. Students

Identifying Stakeholders and Institutional Constraints

Tenure track faculty

The department includes faculty on the tenure track; as with most Research 1 universities, these faculty have demanding research and publication requirements; they must balance these requirements with developing and mentoring graduate students as well as teaching undergraduate and graduate level courses. Typically, tenure track faculty have a 2:2 teaching load, i.e., 2 courses per semester during the 9-month academic year.

Constraints on tenure track faculty include the need to balance research, teaching, and service as described in department-, college-, and university-level governance documents. These institutional documents require assistant tenure track faculty and clinical track faculty to have their teaching formally reviewed at least once per year in their first four years of appointment [13]. They also specify that the evaluation of teaching must address the syllabus and teaching

materials in addition to the faculty member's classroom instruction [14]. New requirements at the university level now specify that evaluation of teaching must include opportunities for both formative and summative assessment, a requirement that has come out of the university's initiatives to improve teaching, led by the university's Michael V. Drake Institute for Teaching and Learning [13].

Clinical track faculty

In our department, faculty on the clinical track may be hired according to their expertise in practicing engineering in industry OR expertise in teaching and pedagogy, including publication of the scholarship of teaching and learning. Compared to tenure track faculty, clinical track professors in our department are more oriented to teaching than research, so teaching loads are greater and requirements for research, publications and graduate student development are lesser. In contrast to the continuing contracts available to tenure track faculty, clinical track faculty have contracts limited to 3-5 years, and must be reviewed to renew their contracts on an ongoing basis.

Clinical track faculty must balance many of the same institutional requirements on research and teaching as tenure track faculty; however, because these faculty positions are more narrowly defined from department to department, their requirements for peer review of teaching are less well defined by the college- and institutional-level governance documents and requirements. Currently, probationary clinical track faculty must have their teaching reviewed at least once per year in the first four years of their appointment, and then every other year following promotion to associate clinical track faculty [14].

Lecturers

Lecturers comprise approximately half of the faculty in the department. Lecturers are responsible for delivering courses, which include technical communication, engineering math, multidisciplinary design capstone, and the first-year fundamentals of engineering sequence, among others. Over three thousand engineering students are served by these faculty annually, and 90% of these faculty members' responsibilities are dedicated to teaching, with 10% focused on service and other departmental duties. These faculty teach the greatest number of students annually, and annual performance reviews of these faculty focus primarily on effectiveness of delivering these courses. In contrast to tenure track faculty and clinical track faculty, lecturers have contracts limited to 1-3 years, and must be reviewed to renew their contracts on an ongoing basis.

Departmental supervisors of lecturers

Lecturers are evaluated annually by the department chair's designee, which is currently the department's associate chair. Prior to the development of the peer review of teaching program, the associate chair evaluated more than 20 lecturers annually, resulting in an added workload of approximately 40 hours on top of the extensive and demanding day-to-day administrative duties, including scheduling and coordinating the work of 180 undergraduate teaching assistants.

In addition to annual evaluations of teaching, the associate chair conducts formal performance reviews of all lecturers. During those performance reviews, lecturer teaching is discussed primarily in the context of institutional student evaluations of instruction.

Because of the limits on the associate chair's time and the limitations of the tools available to evaluate faculty instruction, a peer review of teaching program benefits the associate chair by distributing the review workload across the department, producing evidence of faculty engagement in efforts to improve of teaching, and additional data points for review. Collectively, this creates a fuller picture of an associated faculty member for evaluation purposes.

Department chairs/heads

The classroom teaching of tenure track faculty and professors of practice are reviewed annually by the department chair. In the previous system, each chair determined their own process for scheduling and reviewing faculty teaching. As a new department, we had no standard procedure for scheduling or conducting these evaluations. As such, junior faculty members often arranged their own reviews, which violates the college level governance documents' specification that faculty will not be responsible for initiating the review of their teaching. In addition, each department chair brought their own expertise and approach to the process of review. While this can allow for each chair to tailor the approach to the individual faculty member under review, it does not ensure that the evaluation addresses the criteria required to write a robust letter in support of the faculty's teaching to be included in a successful dossier for promotion and tenure.

Because of a lack of standard procedures, the department chair benefits from a peer review of teaching program in several ways, including eliminating uncertainty around who is responsible for initiating the review. By appointing a peer review of teaching committee to initiate reviews of faculty members and creating evidence-based resources and documents to structure and document the evaluation process, this process also helps the department align its practices more clearly with the content and criteria required by college and university level governance documents.

College leadership

While direct evaluation of faculty instruction is conducted within the Department itself, college leadership is invested in enhancing the teaching within the College of Engineering. In our college's most recent strategic plan, one of the core goals is "to provide an unsurpassed, student-centered learning experience" [15]. As such, a robust and standardized way of conducting peer review of teaching benefits college leadership who need a way for all engineering departments in the college to evaluate the teaching of their faculty. It also allows college leadership to clearly demonstrate to external stakeholders that a system for reviewing and improving teaching is in place.

Accreditors and industry

Engineering programs in colleges and universities also have a commitment to demonstrating the teaching excellence of their instructors to external stakeholders, including accreditors like ABET and industry professionals who hire graduates from their programs.

ABET Criterion 6 requires that universities demonstrate faculty professional development, with teaching development an implied emphasis of this criterion. Accreditors will benefit from a robust peer review of teaching program by seeing a standardized and evidence-based method of reviewing and evaluating faculty instructional practices.

Industry professionals who hire graduates from engineering programs want to know that their new employees will have the skills, knowledge, and abilities required to perform (or learn to perform) the day-to-day tasks they will complete as engineers. These stakeholders will benefit from a standardized and evidence-based method of reviewing and evaluating instruction because faculty teaching will be improved by a peer review of teaching program designed to help faculty identify where and how they might be more effective in their teaching.

Students

Students are perhaps obvious stakeholders who benefit from a peer review of teaching program. A peer review of teaching program that provides several options for faculty to review and improve their teaching provides additional data points for teaching evaluation that can improve the instruction of a faculty member and benefit student learning. This is the foundational and central goal of an effective peer review of teaching program: enhancing teaching quality through facilitating faculty development of new approaches to teaching, learning, and assessment [16].

Navigating and Adapting to Institutional Culture

Our practices are bounded by our department, both organizationally and culturally. College-level stakeholders at OSU are invested in development of a process that can be adapted by other engineering departments in the college, but our process has been designed and developed to meet the specific needs of faculty members in the department. Other departments adapting the program would need to modify the program to meet the needs of their governance documents as well as the needs of any unique stakeholders.

Further, while there are engineering education advocates and allies in all departments in the College of Engineering at Ohio State, a department of engineering education clearly attracts faculty for whom education—and therefore the enhancement of teaching—is a priority. Our departmental culture values and prioritizes teaching, as demonstrated through our near-unanimous agreement that a method for reviewing and enhancing teaching was needed. At the same time, faculty workloads at all ranks and tracks are already extensive and difficult to manage, so an additional constraint was to develop an effective system that minimized the added burden to faculty with already full schedules.

Creating the Peer Review of Teaching Process

Establishing a process and timeline

The department formed a peer review of teaching committee, and the associate chair solicited volunteers to serve. We assembled an initial committee of six faculty, comprised of four lecturers, one assistant dean, and the associate chair. All members had prior interest and/or experience with peer review of teaching and were committed to working to help develop a systematic process for all faculty in the department. We found this committee makeup of faculty from multiple roles, perspectives, and backgrounds valuable in navigating the process; in particular, experience with academic change projects in the past and knowledge of organizational cultures in the department and in the college helped us effectively assess stakeholder needs and concerns.

The co-leaders of the committee began the initial planning phases for the process, including making contact with the director of our university's faculty development and teaching center. This director provided a model document, produced and used by a separate department in the university[12], and guided the committee to discuss next steps for planning, which included: arranging and holding a departmental meeting—led by the director— to discuss and agree upon shared values around teaching and teaching observations ; using that information to develop a shared description of the department's values around teaching to include in a policy document; and setting a realistic timeline for developing and implementing the program. The committee began weekly planning meetings to conceive and develop the policy document, descriptions of processes, and supporting forms and resources.

Developing a policy document

The next phase in developing the peer review of teaching policy was to identify the types of activities that would meet our values and needs, and determine whether our process would include formative, summative, or both options for review. A key modification to the department culture that this policy grounds is a reframing of what constitutes "peer review of teaching".

To determine the kinds of activities that constituted peer review of teaching activities we valued, we referred to the previous model, which included 17 options in four different categories:

1. teaching of university courses,
2. producing textbooks and other educational resources,
3. advising and mentoring undergraduate and graduate students, and
4. capturing scholarship of teaching and learning activity.

Research was conducted by our program assistant to review the most updated literature on peer review of teaching (see references in Appendix A, "Rationale" section); we also referred to and addressed our institution's values around teaching excellence, as documented in our college's and university's strategic plans, to update and integrate into the policy document.

To determine whether our process would include formative options, summative options, or both, we returned to the goals of our program: enhancing faculty instruction and meeting institutional requirements for peer review of teaching. We determined that a range of formative options would allow faculty to choose activities that could enhance their teaching based on their needs and interests. In our initial pilot, we asked faculty to select one formative option to complete and document during the academic year. Our plan was to request faculty complete three formative options annually, going forward; we suggested that faculty select options in conversation with their supervisor or mentors to ensure that choices are made based on reflection about teaching practice as well as timelines for submitting dossiers for promotion and tenure.

We determined that incorporating meaningful, but intermittently administered summative options as part of faculty annual reviews would ensure that the focus remained on teaching development, rather than strictly measured performance. To meet the needs of faculty who would require summative evaluations for their promotion and tenure dossiers, our review options on classroom teaching, syllabus and course materials include instructions and forms to help observers produce written reports documenting their observations that could be incorporated into formal summative letters by other reviewers later. While our system is intended to reflect our

department's value of the multiple and ongoing ways that faculty can and should work to enhance their teaching, we have not been a department long enough to fully explore how the promotion and tenure committee will review and weigh documentation of this range of activities in relation to formal student evaluations of teaching or traditional classroom teaching observation reports.

Through articulating this set of seventeen different options, the policy document created a framework for a comprehensive faculty teaching development system. This system allows faculty to schedule and complete multiple "traditional" teaching observations in a semester, but it also values, promotes, and expands the conversation around activities which were not previously included in definitions of "peer review of teaching." This framework values activities including observing someone else's teaching, evaluating one's philosophy around mentoring students, evaluating how one's scholarship of teaching and learning influences one's teaching practice, or analyzing a video of one's classroom teaching with a collaborator. By providing a framework that included traditional classroom teaching observations, but also expanded and valued the range of activities that can promoted teaching enhancement, we were able to help faculty both meet documentation needs for tenure and promotion dossiers at the college and university level, but also to recognize and promote the activities that improve teaching for faculty from all roles and levels within the department, including clinical track faculty and lecturers.

Transitioning from policy to action

Once the policy document was developed, we introduced it to the department for review and comments. Feedback from that meeting was used to further refine the policy document, before beginning to develop a systematic process that would support the implementation of the policy with minimal effort and difficulty for faculty.

The first goal in moving from policy to action was to determine the best way to organize the information and communicate expectations to the respective faculty in a straightforward and digestible way. To do this, we built out an existing departmental resource in the OSU's learning management system (LMS), Canvas, that was already used to communicate intradepartmental activities, such as committee work and achievements. We created a host page where we outlined the goals and purpose of the peer review of teaching system, described responsibilities for each faculty member in completing peer review of teaching activities, and provided a numbered outline of each of the options (see Fig. 1).

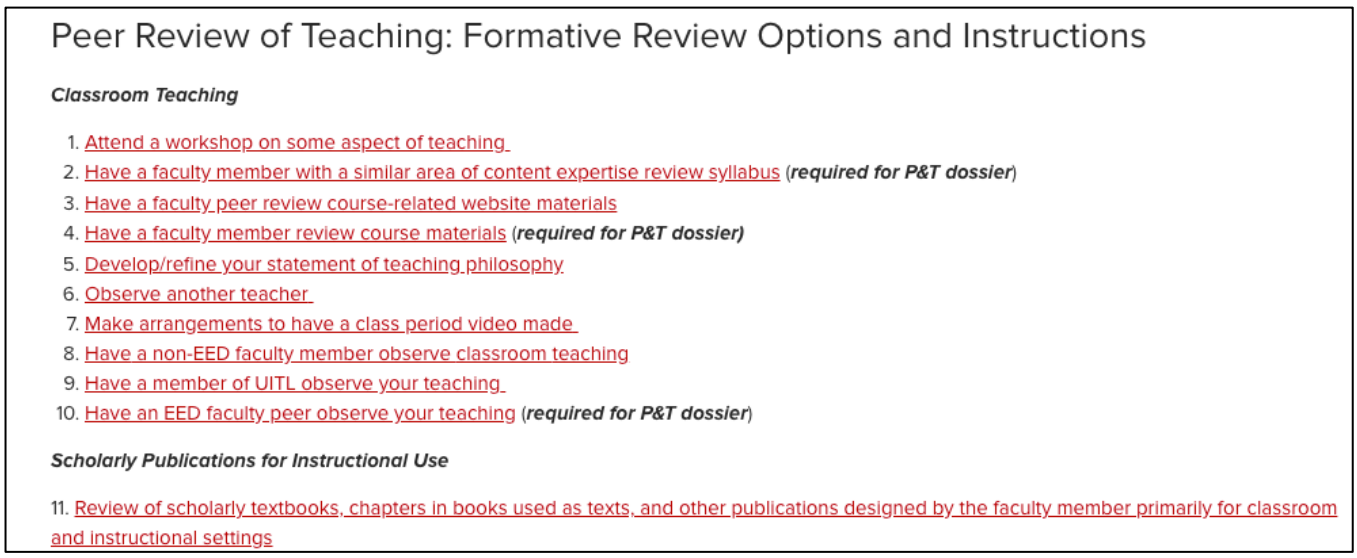
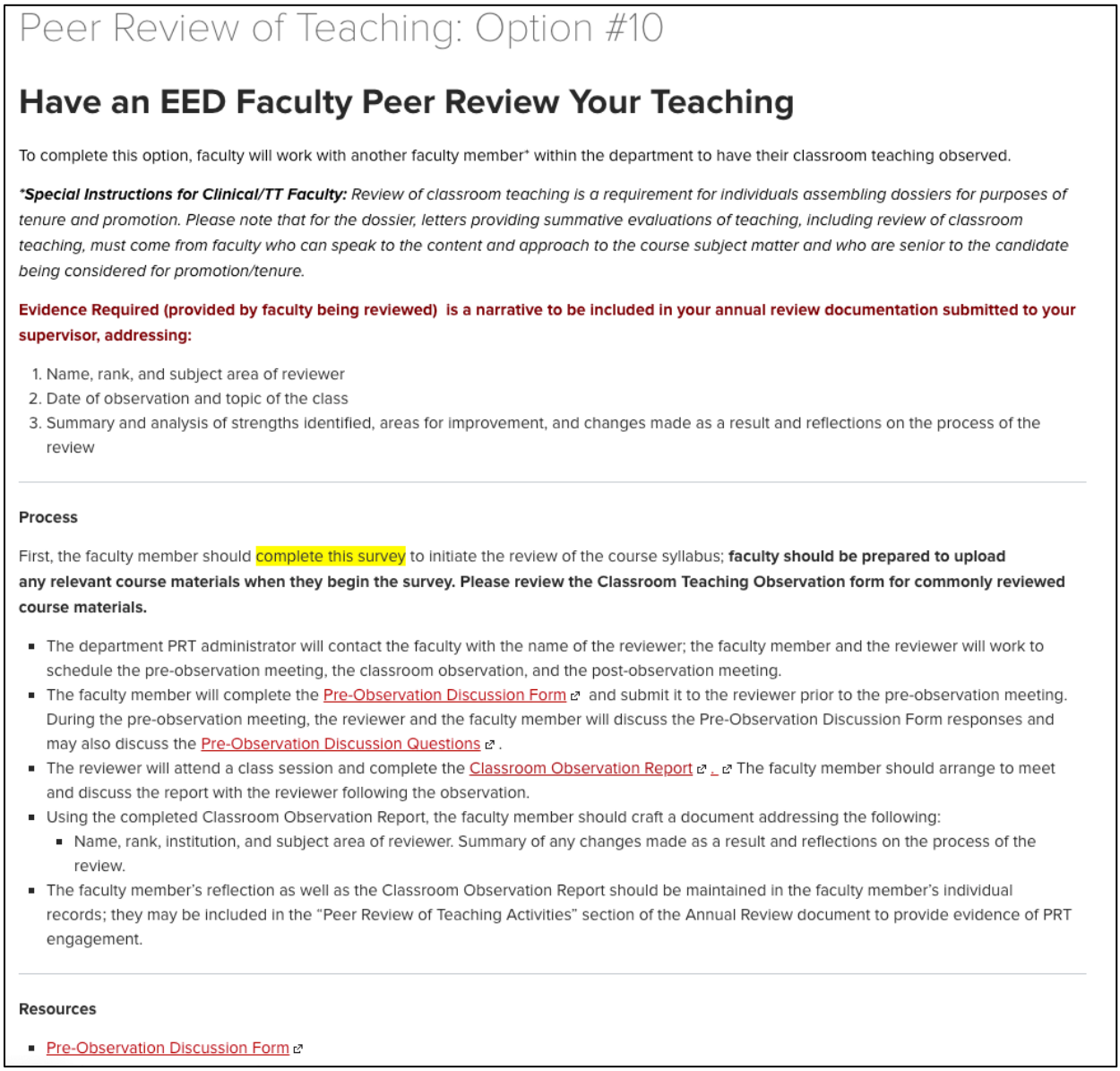


Fig. 1: Outline of review options from departmental LMS Peer Review of Teaching landing page

At the same time, we began evaluating each option and conducted research on existing peer review of teaching programs to determine what tools and resources we could develop or make available to provide guidance and support for faculty who might not be familiar with how to complete a particular option. We created a separate page for each option with goals, evidence required, instructions, and resources (Fig. 2). Some examples of resources we identified or developed included Classroom Observation Protocol for Undergraduate STEM (COPUS) [17] protocols; forms and questions to direct classroom teaching observations before, during, and after the observation; and literature on writing teaching philosophies. Each resource was intended to clarify the purpose and assist faculty in completing each option. We were able to provide these resources and supports via the LMS for each option, so that a faculty member who, for example, wanted to arrange to have their classroom teaching observed, could see at a glance the instructions, documentation to be produced, forms, and resources to help them engage in a meaningful and evidence-based activity.



Peer Review of Teaching: Option #10

Have an EED Faculty Peer Review Your Teaching

To complete this option, faculty will work with another faculty member* within the department to have their classroom teaching observed.

***Special Instructions for Clinical/TT Faculty:** Review of classroom teaching is a requirement for individuals assembling dossiers for purposes of tenure and promotion. Please note that for the dossier, letters providing summative evaluations of teaching, including review of classroom teaching, must come from faculty who can speak to the content and approach to the course subject matter and who are senior to the candidate being considered for promotion/tenure.*

Evidence Required (provided by faculty being reviewed) is a narrative to be included in your annual review documentation submitted to your supervisor, addressing:

1. Name, rank, and subject area of reviewer
2. Date of observation and topic of the class
3. Summary and analysis of strengths identified, areas for improvement, and changes made as a result and reflections on the process of the review

Process

First, the faculty member should complete this survey to initiate the review of the course syllabus; **faculty should be prepared to upload any relevant course materials when they begin the survey. Please review the Classroom Teaching Observation form for commonly reviewed course materials.**

- The department PRT administrator will contact the faculty with the name of the reviewer; the faculty member and the reviewer will work to schedule the pre-observation meeting, the classroom observation, and the post-observation meeting.
- The faculty member will complete the Pre-Observation Discussion Form and submit it to the reviewer prior to the pre-observation meeting. During the pre-observation meeting, the reviewer and the faculty member will discuss the Pre-Observation Discussion Form responses and may also discuss the Pre-Observation Discussion Questions .
- The reviewer will attend a class session and complete the Classroom Observation Report . The faculty member should arrange to meet and discuss the report with the reviewer following the observation.
- Using the completed Classroom Observation Report, the faculty member should craft a document addressing the following:
  - Name, rank, institution, and subject area of reviewer. Summary of any changes made as a result and reflections on the process of the review.
- The faculty member's reflection as well as the Classroom Observation Report should be maintained in the faculty member's individual records; they may be included in the "Peer Review of Teaching Activities" section of the Annual Review document to provide evidence of PRT engagement.

Resources

- Pre-Observation Discussion Form

Fig. 2: Example of PRT Option Page with Description, Instructions, and Resources

Coordinating and collaborating to implement and assess a PRT program

Following the development of the policy document and the LMS pages supporting process communication and implementation, we began to consider additional departmental and institutional stakeholders who could be involved to ensure that faculty were able to engage in the options fully and effectively. We also needed to determine how to best coordinate these activities with other committees in our new department, in particular the EED Promotion and Tenure committee and our Professional Development committee. In this section, we outline the institutional resources we leveraged to train faculty in peer review of teaching as well as the process of coordinating peer review of teaching activities with our professional development committee and promotion and tenure committee.

Our department is new and consists of faculty from a variety of backgrounds and a range of teaching experience (from 0 to 50 years of teaching). Some faculty have extensive experience both with having their teaching reviewed as well as reviewing the teaching of others, while some have never had their teaching formally reviewed. Through discussion, the PRT committee determined that faculty would benefit from training in how to best conduct peer reviews of teaching options that are required for promotion and tenure: 1.) Observation of classroom teaching; 2.) Review of syllabus and other course materials.

We coordinated with the Michael V. Drake Institute for Teaching and Learning, which employs staff trained in evidence-based faculty development, trainings on conducting evidence-based observations of classroom teaching, as well as using the forms we created to structure effective and useful conversations prior to and after the observation of teaching session occurred. We also conducted a second session on using the evidence from the observation of teaching report to write effective letters of evaluation of teaching. Recently, we offered trainings on how to evaluate and review online courses, and how to evaluate course materials, including course syllabi and schedules.

In addition to conducting these trainings, during our pilot year for the peer review of teaching program, we have coordinated our efforts with the promotion and tenure committee to capture and assess PRT activity and to ensure that junior faculty are meeting requirements to develop successful promotion and tenure dossiers. The chair of the promotion and tenure committee is copied on all emails regarding observations of classroom teaching and review of syllabi/course materials, which are the activities required for junior faculty's promotion and tenure dossiers. This ensures that the chair is aware that these reviews are being performed and can ensure that the reports on classroom teaching are translated into useful, formal evaluations of the candidates in their dossiers.

We also coordinated our efforts with the EED's professional development committee to help structure our own assessment of the PRT program. The professional development committee currently asks faculty to record their professional development activities, annually, so a natural relationship between their work and that of PRT was apparent. We requested that the chair of the professional development committee build assessment questions into their recording system so that we could 1.) reduce the number of requests on faculty time; and 2.) record the evidence of faculty engagement in PRT for assessment purposes. This is done through a Qualtrics survey embedded into a separate section of our departmental LMS page.

With the goals of supporting faculty and student success at the center of our mission, and in order to ensure the peer review of teaching program is a long-term success, the committee regularly involved the department as we created the various peer review/professional development options to be piloted. We also recognized the need for an assessment component, beginning with the pilot year.

Our assessment goals for the pilot year were to continue improving the program and its processes. More specifically, we wanted to collect information about which options faculty were choosing, why they were choosing those options, and whether they perceived the program as beneficial to their pedagogical practices and professional growth. We also wanted feedback on

whether the process and resources we created were easy to access, understand, and use. We decided on an initial assessment structure that asked for feedback from faculty annually, with an additional longitudinal review after five years. Therefore, our pilot year assessment collected data in two ways: by asking faculty to log/upload the evidence of their participation in the program to a central location and by distributing an anonymous survey at the end of the year to determine faculty satisfaction with the process (i.e., ease of use, clarity of instructions) and perceived benefit of participating (i.e., benefit to teaching pedagogy, recognition and/or advancement of professional goals).

The committee plans to do a qualitative review of the evidence and reflective material submitted by faculty as part of the completion of their peer review of teaching activities. This should give us insight into faculty perception of the value added by their participation in their chosen option (e.g., how useful they found the activity and whether doing so resulted in any change in their teaching).

Additionally, surveys will be distributed that ask faculty members to identify which options they completed in the previous year, their rationale for completing their chosen options, and to explain any changes they made to their teaching as a result of participating in the activity. Finally, the survey will ask for suggestions to improve the peer review of teaching program, its processes, and/or the options included in the PRT program.

In gathering data from both the evidence collection system and the surveys distributed at the end of each academic year, we can quantitatively identify which options are valued over others across all faculty ranks. This, combined with the quantitative survey data, will help us gauge both the program's strengths and areas for improvement.

Where Do We Go From Here? Next Steps and the Future

Our process (see Appendix B for a flow chart) of developing a peer review of teaching program documented in this paper aligns with the model of organizational change developed by Barnard et al. [18]. Their LeaD-In model supports what we have demonstrated here: "Successful integration of teaching demands acknowledgement and understanding of the politics of change, the motivations and thinking that influence academic leaders, the need for organizational support and the needs of the wider university community." (p. 40). Here we offer observations and recommendations across these three dimensions to aid leaders seeking to create similar processes in their own units or institutions:

Understanding the politics of change

There are significant challenges to developing and integrating a program of peer review, which can be "a largely unfamiliar activity" that is "generally unsupported by policy and culture" [18]. From the beginning, our peer review of teaching committee sought to understand the needs of all our stakeholders and embraced a model of peer review of teaching focused less on developing punitive or evaluative measures, and more on understanding individual instructors' needs. By offering a range of options for peer review, individuals are empowered to improve their teaching in the ways and at the level they most need. Harris et al. [19] suggest that this focus on "helping

individuals develop insights into their teaching" is essential for "a sustainable addition to practice" (p. 35).

Understanding motivations and thinking that influence academic leaders

"Impositional leadership," where those who lead "impose their agendas on those who they lead" has been found to be an unsuccessful method for creating change in organizational cultures, especially in "critically sensitive academic cultures" [20]. Our process description demonstrates the effectiveness of "distributed leadership," wherein the committee leading the process development included faculty with no managerial oversight; similarly, the process that the committee followed also distributed power and leadership across stakeholders, by enlisting expertise from our university teaching center, communicating and requesting feedback from our faculty early and frequently in the process, and by continuing to communicate the purpose and goals of the program. Barnard et al. [18] show that "…there is evidence that reinforces the argument that distributive leadership is more likely to facilitate innovative organizational change related to peer review of teaching." (p. 41). We believe that this distributive leadership was essential for the development of our successful peer review of teaching program. We recommend that other departments interested in developing such a program ought to embrace teams where leadership and power is distributed and where these elements can shift and be redistributed based on the needs of the stakeholders and the unit.

Organizational support

The process of developing an effective and successful peer review of teaching program is time intensive and costly. Departments and units wishing to develop a similar program must evaluate the balance of research, teaching, and service of leaders developing such a program. Their departmental or institutional service requirements during the planning and development phases especially, should be recognized and elevated in their annual reviews as well as promotion and tenure documentation.

In addition to recognizing the time and effort involved in developing such a program, departments should also recognize the time and effort required from faculty beginning to enhance their approaches to teaching. As faculty begin to re-imagine their relationship with peer review, departments and units can support them by providing trainings and resources focused on teaching development. We provided trainings to help faculty not only use the resources we developed and provided (for example, classroom observation reports), but also to understand evidence-based best practices essential to gaining the most benefit from activities such as classroom observation and review of a course syllabus and schedule. While we believe organizational change can shift most successfully when these trainings are embedded into existing institutional procedures (such as holding them during regular faculty and staff meetings), making them available at regular intervals, such as once or twice each year, conveys departmental value of these activities and ongoing commitment to developing a culture around teaching improvement.

The final piece in creating a cultural shift in our department through our peer review of teaching program is assessment. As a department focused on education, our goal is that this PRT program will develop faculty instruction in effective and reliable ways. To ensure we are moving in this direction, as we approach the five-year mark of the program's implementation, we will review

the data produced by a regular, annual assessment of the evidences submitted by faculty engaged in peer review of teaching to determine whether additional assessment is needed. This will be enough time to warrant additional data collection with respect to trends in annual performance reviews and institutional data from cumulative student evaluations of instruction for department faculty.

Assessment will also be supported by a research. This project, led by graduate students will explore the PRT process through the lens of the engineering educators' perceptions. While assessing the success of the program through surveys regarding faculty participation in the PRT process and any changes in teaching that were a result of the PRT process, it is also important to consider how faculty perceived the program with regards to their own needs as educators. This research will be conducted through a series of focus groups with engineering faculty that will explore what faculty members self-report their needs to be with regards to a review of their teaching and materials, and if they perceived the new PRT process to have met those needs. Focus groups will likely elicit more insightful and detailed data through conversations and discussions between engineering faculty member participants with varying experiences and perspectives comparatively to one-on-one interviews with individual faculty members. The results of the research on faculty perceptions of the PRT process and its ability to meet their needs as educators will be combined with the results of the survey assessment of the PRT process to evaluate the overall success of the pilot implementation of the PRT process and suggest changes that will improve both the quality of the PRT experience and results for future implementations. By embracing a practice → assessment → research → practice feedback loop, we aim to make our peer review of teaching program a useful, sustainable, and lasting element of our department's culture.

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School Name Here
College Name Here
Department Name Here

Peer Review of Teaching Document
Adopted XXXX

BACKGROUND

NATIONAL CLIMATE

During the past two decades, there has been growing interest and increasing focus on teaching within college campuses throughout the country. External demands for improved quality in teaching have come from private and public sectors, accrediting bodies, and state governing boards. In particular there has been a call for evidence-based teaching practices that are better aligned with student learning and outcomes (Finkelstein, 2017; President's Council of Advisors on Science and Technology, PCAST, 2012; Dennin, et al., 2017). Internally, voices within higher education have focused their attention on teaching, based, at least partially, on concerns that the academic culture has become focused on research at the expense of quality teaching (Bradforth, et al., 2015; Gormally et al., 2014). Hence, there have been attempts to elevate the status and improve the effectiveness of teaching within the academy, and Centers for Excellence in Teaching have appeared at colleges and universities throughout the country. Other forces, such as changes in information and technology also have impacted teaching. As a result, teaching and learning, which were once considered the private domain of an individual faculty member, have more and more become public territory.

CLIMATE AT THE [Specific School Name Excised] AND THE COLLEGE OF ENGINEERING

The [Specific Name Excised] Strategic Plan, launched by [Specific School Name Excised] in 2017, establishes teaching and learning as a key pillar of the plan and states the university's aspiration to "be an exemplar of the best teaching, demonstrating leadership by adopting innovative, at-scale approaches to teaching and learning to improve student outcomes". Goals articulated in line with this aspiration include the desire to "Achieve broadest possible participation in high-quality professional development programs for teachers" and to "Staff critical courses in line with demonstrated teaching excellence" (Office of the President, 2019). Within the College of Engineering, our strategic plan's first goal emphasizes the importance of teaching: "provide a world-class undergraduate engineering and architecture education maintaining our stature as a top-ten producer of BS engineering degrees" and a key strategy to achieving this is to "hire and develop the best teachers in the country" ([Specific School Name Excised]: College of Engineering, 2014, p. 6).

CLIMATE AND CULTURE IN THE DEPARTMENT OF ENGINEERING EDUCATION

The Department of Engineering Education has worked, since its inception, to develop a culture that values and supports teaching. The strategic mission of the department is "to create and communicate approaches to engineering education that transform knowledge and enhance the technological workforce and society" ("Strategic Planning in the EED", 2019); enhancing

teaching through community support and individual reflection aligns clearly with this mission. In Autumn of 2018, discussions among EED faculty served as an initial impetus to formalize this commitment. In this culture, there is strong evidence that:

- Teaching is valued;
- Department faculty are invested in the scholarship of teaching and learning;
- Department faculty use their learning and experiences to continually evolve their teaching;
- The process of engaging in instructional enhancement is valued, as well as the outcome;
- Teaching should be open, public, and shared, and discussions of teaching are part of the culture; and
- Department faculty take ownership of their instruction.

DEFINITIONS

The EED defines the following terms with respect to peer evaluation of teaching.

Peer: a faculty colleague, of any rank, who can be located within the EED, the College of Engineering, the [Specific School Name Excised], or at another Institution.

Inter-disciplinary peers: faculty colleagues within [Specific School Name Excised] who can comment upon and give guidance and input regarding a faculty member's pedagogy, including philosophy and approach to teaching, presentation skills, facilitation skills, assessment methods, curriculum design, and organization.

Intra-disciplinary peers: faculty colleagues within a faculty member's area of expertise (may be housed at [Specific School Name Excised] or at another Institution) who can comment upon and give guidance and input regarding a faculty member's course content, including course objectives, materials and resources.

Formative Evaluation: designed to contribute to the development of teaching. The purpose of formative evaluation is to validate or ensure that the goals of the instruction are being achieved and to improve the instruction, if necessary, by means of identification and subsequent remediation of problematic aspects.

Summative Evaluation: evaluation whose goal is to assess the quality of teaching performance/effectiveness. A summative review results in documentation that can be reviewed by others.

Teaching Portfolio: "A coherent set of materials, including work samples and reflective commentary on them, compiled by a faculty member to inquire into and represent his or her teaching practice as related to student learning and development." (Hutchings, 1993).

RATIONALE FOR PEER REVIEW OF TEACHING

Peer review of teaching has become more common at colleges and universities around the nation. Historically, there have been national and local efforts to engage in more formalized methods of peer review within academic units, based on the belief that such methods will ultimately improve teaching. In a 2017 report on STEM teaching, the Association of American Universities stated that "[l]arger long-term improvement to undergraduate STEM education will evolve from an environment of continuous improvement of teaching coupled with an altering of the practice of how contributions to teaching are recognized and rewarded at research institutions, particularly relating to the evaluation of teaching for purposes of merit and promotion" (Dennin, et al., 2017). At least part of the growing emphasis on peer review is the recognition that student ratings are a necessary, but inadequate method of evaluating instruction. Student evaluations are an unreliable measure for teaching effectiveness and can be heavily influenced by gender and racial biases (Boring, et al., 2016). In some cases, student evaluations have been negatively correlated with objective assessments of teaching quality, in part because effective teachers typically require more effort from their students (Braga, 2014). Even bad weather can have a negative impact on student evaluations (Braga, 2014). Further, there is strong evidence that student ratings do not persuade teachers to improve, either because they are too harsh and ultimately discourage faculty from placing emphasis on teaching, or because they are too vague, and faculty are left uncertain about what steps are needed to improve. In a survey of more than 250 professors at diverse institutions, more than 75% of respondents stated they ignored students' comments and feedback, except for very small changes (e.g., font size on overheads) (McKeachie, 1983). It is within this context that peer review of teaching is intended to supplement student and other evaluative sources of information about instruction, with the ultimate goal of teaching enhancement.

Peer review of teaching is an "intentional observation process" where faculty are encouraged to engage critically with their own and a colleagues' teaching practice (Thomas et al., 2014). In this approach, faculty would consider what they want to accentuate and why, and in what areas they would be receptive to advice, guidance, and input from peers. Thus, peer review is not simply a compilation of all teaching materials for review by another, but an attempt to articulate to others the rationale for various approaches, and in so doing, consider how these approaches may or may not have the intended results (Taylor, 1999).

Faculty who use peer review find that both reviewer and reviewee benefit and are able to identify areas for improvement (Teoh, et al., 2016). It encourages pedagogical discourse through mutual and self-reflection and increases instructors' confidence in their teaching (White et al., 2014; Richards, et al., 2019). In addition, peer review can be an opportunity for faculty to deepen their collegial relationships and engage in a more collaborative teaching process (Mundy & Grabau, 1999; Thomas, et al., 2014). Effective peer review can enhance relationships within departments and boost departmental morale (Massy, Wilger, & Colbeck, 1994). Peer review can be a source of great learning for the reviewers as well, with all faculty developing more diversified teaching strategies, and increasing their enthusiasm for sharing their knowledge of how to teach effectively (Bernstein & Edwards, 2001; Thomas, et al., 2014). Survey data from Lilly Teaching Fellows finds that ultimately, peer review, when done within the context of a mentoring

program, can help junior faculty to achieve tenure, particularly within a culture that values teaching (List, 1997).

In order to develop a successful peer review system that fosters excellence in teaching and learning, faculty and administrators must take affirmative action in support of such systems (Dennin et al., 2017). Mundy & Grabau (1999) argue that the attitudes of faculty and administration toward teaching and peer review are actually more important than the formal design of the peer review program. To be successful, faculty must believe that they can grow in their teaching skills, and that such growth is important and valued. They also must believe that their colleagues can contribute to that growth, and that they, in turn, have something to contribute to others.

At [Specific School Name Excised], the University Senate adopted a policy regarding peer review of teaching in 2000 and mandated that guidelines for peer review must be adopted by each Tenure Initiating Unit.

PHILOSOPHY AND PRINCIPLES OF PEER REVIEW WITHIN EED

The EED Peer Review of Teaching is situated within this national, university-wide, college-wide and departmental climate around teaching. Peer Review of Teaching also is informed by an overarching philosophy and specific principles regarding peer review, as articulated below.

PHILOSOPHY

Peer Review of Teaching in the Department of Engineering Education is a *critically reflective, collaborative,* and *continuous* activity focused on developing *instructional excellence* among the faculty. The goal of the EED peer review of teaching process is to foster sustained reflection on one's own teaching and to promote dialogue among faculty concerning insights about teaching and the instructional processes.

As an education-focused department in the College of Engineering, EED faculty must embrace, lead, and model actions and critical reflection and activities focusing on excellence in teaching and continuous improvement in the instructional process. A system for peer review of teaching supports the Department of Engineering Education's mission to be a leader in instructional expertise across the college.

Critical reflection on instructional practices can be heightened through participation in a community of scholars who endeavor to improve instructional practices. While reflection can and should occur on an individual level, faculty in the EED are committed to continuously improving the quality of instruction in both the academic community as a whole and as individual members in that community. Peer review of teaching is one practice for facilitating this critical reflection.

PRINCIPLES

The [Specific School Name Excised] Committee on Peer Review of Teaching (CPRT), an Ad Hoc Committee of the University Senate, articulated the following principles for peer review (November 7, 2000):

- Evaluation of the quality of university teaching is a complex, multifaceted process that should include student, peer, administrative and self-evaluation;
- Both the criteria and the appropriate procedures for judging the quality of teaching must be embedded in disciplinary cultures and informed by departmental missions;
- Development and implementation of specific criteria and procedures is a faculty role and responsibility; and
- Models of effective and responsible evaluation plans, both within [Specific School Name Excised] and in peer and benchmark institutions exist; research on these practices and a scholarly awareness of these models and this body of research can assist [Specific School Name Excised]in designing effective programs of peer review.

To respond to the call to base the peer review on best practices at benchmark institutions and a review of the scholarship of teaching related to the topic, the following principles were gleaned from the research and literature and have been supported by the faculty of the department:

Peer Review of Teaching should:

- Be openly discussed among faculty, and faculty should determine the range of teaching practices they wish to include in the reviews and the specific criteria that will be used for review;
- Include both formative and summative reviews, with clear criteria that differentiates the review process for both and in which reviews are used only for the purpose stated;
- Include multiple sources of data that are collected over time and are integrated within the context of the discipline and the department;
- Include self-assessment that allows individual faculty members to explain the goals and intentions of their courses and teaching, the philosophy of their teaching that informs their practice, and encourages self-reflection to improve their teaching;
- Allow for different teaching styles that are appropriate and effective for the courses and students under consideration;
- Be part of an overall, on-going process to continually improve teaching at all ranks and levels of the professoriate;
- Be rigorous and relevant, and based on the belief that teaching as scholarship implies that knowledge must transmitted to, and understood by, a new generation of scholars;
- Be transparent. Faculty being reviewed must understand the criteria for evaluation and must be given access to the evaluations written about their teaching;
- Be situated within the culture of the Department of Engineering Education that values and supports instruction, with faculty and administrators who value the importance of teaching and articulate this value in departmental documents as well as practices related to the faculty review and reward system;
- Have, as its ultimate goal, instructional enhancement. Thus, "closing the loop" is a critical concept to peer review. Faculty should use what they learn through the multiple sources of feedback (self, student, peer, administrator) to make informed decisions to improve their teaching, and then seek on-going input and feedback about these changes.

APPOINTMENT OF PEER REVIEW OF TEACHING COMMITTEE MEMBERS

Annually, the department chair appoints a Peer Review of Teaching Committee of a size judged sufficient to administer and evaluate the process of peer review activity in the department. The

term of service is one year, with reappointment possible. Reasonable efforts are made to distribute service among the faculty from year to year in order to support and encourage attention to the quality of teaching in the department. Faculty at all ranks and level will serve on the committee.

PEER REVIEW OF TEACHING COMMITTEE CHARGE

The EED's Peer Review of Teaching Committee is responsible for administering review of teaching as described in the College of Engineering's "Appointments, Promotion, and Tenure (APT) Criteria and Procedures," document (2019, p. 34). Per this document, the EED Peer Review of Teaching Committee is responsible for the following:

- Ensuring that the teaching of faculty at all levels is reviewed annually, with the goal of assessing teaching at all the levels of instruction to which the faculty member is assigned;
- Reviewing, upon the department chair's request, the teaching of any faculty member not currently scheduled for review.

COMPONENTS OF PEER REVIEW[HJ3]

The EED Appointment, Promotion, and Tenure Document, refers to the College of Engineering Appointment, Promotion, and Tenure document for its definition of teaching. The College of Engineering Appointment, Promotion, and Tenure document defines teaching as "the imparting of knowledge to and the education of people" and indicates that the college will "foster a learning culture that prepares our students to be key contributors to society" and "be an innovative leader in engineering…education" (p. 22). Activities that comprise teaching in the College of Engineering Appointment, Promotion, and Tenure document are categorized into four areas, with teaching university courses being given the greatest weight in evaluation of teaching. Each of these areas, outlined below, is eligible for peer review of teaching.

1. Teaching university courses – Undergraduate, graduate, and professional courses taught in curricular and co-curricular settings; Curriculum development; Instruction offered by electronic technology; Novel teaching methods, including development of electronic and other forms of educational interactions with students inside and outside the traditional classroom environment
2. Producing textbooks, monographs, and other educational resources, including online teaching resources.
3. Advising and mentoring undergraduate and graduate students, including:
    a. involvement in graduate exams, theses, and dissertations;
    b. promoting, coaching, and mentoring undergraduate researchers;
    c. substantive contributions to undergraduate and graduate student committees;
    d. advising of student groups and organizations; and,
    e. evaluation and direction of student scholarship.
4. Engaging in the scholarship of teaching and learning.

Evaluations that focus on teaching university courses will assess the extent to which a candidate has done the following:

- Provided up-to-date content at an appropriate level and demonstrated continuing growth in subject matter knowledge;

- Demonstrated the ability to organize and present class material effectively with logic, conviction, and enthusiasm;
- Demonstrated appropriate use of various modes of instruction, classroom technology, and other teaching strategies to create an optimal learning environment;
- Engaged students actively in the learning process and encouraged independent thought, creativity, and appreciation of the knowledge creation process;
- Provided appropriate and timely feedback to students;
- Treated students with respect and courtesy;
- Engaged in documentable efforts to improve teaching; and,
- Improved curriculum through revision or new development of courses and/or academic programs.

Additionally, tenure-track faculty evaluations will also include examination of the extent to which a candidate has done the following as applicable:

- Developed interdisciplinary courses across multiple departments, schools and colleges in the case of jointly appointed faculty;
- Served as advisor to an appropriate number of graduate students given the TIU's graduate student/faculty ratio and the faculty member's area(s) of expertise; and,
- Assisted graduate students in the production of high quality published work.

PROCESS FOR PEER REVIEW OF TEACHING

As outlined in Section 2.8.2 of the Office of Academic Affairs Handbook:

> "Peer evaluation of teaching aims to apply appropriate disciplinary (peer) standards to the teaching performance of faculty members. TIUs must provide opportunities for and mechanisms that support both formative and summative evaluation of teaching. The TIU must set forth detailed guidelines for peer evaluation of teaching to be used in faculty performance reviews that is appropriate for the unit's instructional situation(s).
>
> Peer evaluation should focus on those aspects of teaching that students cannot evaluate, such as appropriateness of curricular choices given the goals of the course (survey, major required course), implicit and explicit goals of instruction, choice of examination/evaluation materials by the faculty member, and consistency with current disciplinary knowledge. Assessment of these aspects can be made by peers within the unit or external reviewers as determined by procedures established by the TIU.
>
> TIUs may select from among many modalities of peer review. See the center for teaching development website for links to online resources at [Specific School Name Excised] and at other institutions, as well as published sources that offer principles and methods for the formative and summative evaluation of teaching. TIUs must not only establish guidelines governing evaluation of instruction but also abide by those guidelines, applying them evenly and without prejudice. For further discussion, see Volume 1, Chapter 2, Section 1.4.4: Evaluation of Instruction." (p. 34)

As such, the EED Appointments, Promotion, and Tenure document specifies the following guidelines for the process:

Reviews conducted upon the request of the department chair or the faculty member focus on the specific aspects of instruction requested by the chair or faculty member and may or may not include class visitations.

RELATIONSHIP BETWEEN FORMATIVE AND SUMMATIVE REVIEW OPTIONS AND PROCESSES

All EED faculty members must engage in 3 options of **formative review**, annually. When documentation is developed for fourth year review and for tenure, the following summative review information will be completed *in addition to* that year's formative review.

Summative review is defined above as "evaluation whose goal is to assess the quality of teaching performance/effectiveness. A summative review results in documentation that can be reviewed by others" (glossary of terms above). By engaging in the review and producing the documentation required for the annual formative reviews, faculty work toward the development and enhancement of their teaching, and demonstrate that instructional goals are being met and that progress is being made toward improving instruction. Observations and insights from the formative assessments then form the basis for the summative review. Details on the summative review process can be found below the description of the formative review process.

PROCESS: FORMATIVE REVIEW FOR LECTURERS, SENIOR LECTURERS, CLINICAL FACULTY AND ASSISTANT TENURE TRACK FACULTY

At the end of each academic year, with the completion of the annual review, EED faculty shall select three options from the list below to complete during the following academic year. The Department Chair or designee may give feedback and input regarding the selections, and may require individual faculty to complete specific items from the list below.

To address emphasis placed in the College of Engineering APT (pp. 34) on review of in-class teaching, syllabus, and course materials, in the years prior to consideration for tenure, probationary tenure track and clinical track faculty must complete formative review options #2 (syllabus review), #10 (class visitation by a senior faculty), and option #4 (course material review) as described below.

Upon completion of these activities, and with the submission of the following year's annual review, the faculty member shall provide evidence that these activities were completed and a written narrative that provides evidence of any changes to teaching practice, course content, or other teaching-related endeavors based on the activities, thereby "closing the loop." Unless otherwise specified, evidence provided should be in the form of a brief (one or two paragraph) narrative summary.

The same categories may be selected each year, or faculty may alternate activities. This method will allow faculty to choose peer review that is most relevant and appropriate to their developmental needs. The evidence required in formative reviews is primarily in the form of self-reflective narratives with documentation of changes made as a result of the process. This

method will allow faculty to choose peer review options *and peer reviewers* that have the greatest potential to maximize professional development.

Faculty members are responsible for completing the required peer review of teaching process. Faculty members determine (with consultation, as noted) who will engage with them in the process of peer review.

Options for formative review (must select 3 each calendar year; option #14 may only be selected once per year)

CATEGORY ONE - Teaching University Courses and Curricular Development

1. Attend workshop on some aspect of teaching (University Institute for Teaching and Learning workshops and teaching endorsement programs are examples) either within the university or at a professional society) and demonstrate changes or new ideas that have been/will be incorporated into teaching based on the ideas presented in the workshop.
    a. Evidence required:
        1. Date, topic, and sponsor of the workshop.
        2. Summary of aspects of teaching learned at the workshop and how they have been/will be incorporated into teaching. *If the workshop content was already being integrated into the reviewee's teaching, or is not appropriate for integrating into the reviewer's teaching, explain.*

2. Have a faculty member with a similar area of content expertise (either within [Specific School Name Excised] or at another institution) review the course syllabus and schedule, including descriptions of course goals and major instructional materials for a course. Whenever possible, this review should occur face-to-face and include a pre-review meeting to discuss reviewee goals for the review, and a post-review meeting to provide specific and concrete feedback to the faculty member being reviewed. Note: when an off-campus reviewer is selected, the selection of the reviewer should be discussed with the faculty member's supervisor.
    a. Evidence required:
        1. Name, rank, institution, and subject area of reviewer.
        2. Summary and analysis of strengths identified, areas for improvement, and changes made as a result and reflections on the process of the review.

3. Review of course-related website materials. When website or distance-learning materials, such as the university's course management system, have been developed for a course, these can be reviewed by inter-professional or intra-professional faculty peers. This review can also be done with a consultation from the University Institute for Teaching and Learning (UITL). Whenever possible, this review should occur face-to-face and provide specific and concrete feedback to the faculty member being reviewed. Note: when an off-campus reviewer is selected, the selection of the reviewer should be discussed with the faculty member's supervisor.
    a. Evidence required:
        1. Name, rank, institution, and subject area of reviewer.
        2. Summary and analysis of strengths identified, areas for improvement, and changes made as a result and reflections on the process of the review.

4. Review of course materials. When materials (e.g., grading rubrics, assignments, projects) have been developed or updated for a course, these can be reviewed by inter-professional or intra-professional faculty peers. This review also can be done with a consultation from the university center for teaching development or the office for online education. Whenever possible, this review should occur fact-to-face and include a pre-review meeting to discuss the reviewee's goals for the review, and a post-review meeting to provide specific and concrete feedback to the faculty member being reviewed. Note: when an off-campus reviewer is selected, the selection of the reviewer should be discussed with the faculty member's supervisor.

a. Evidence required:

1. Name, rank, institution, and subject area of reviewer.
2. Summary and analysis of strengths identified, areas for improvement, and changes made as a result and reflections on the process of the review.

5. Development/refinement of teaching philosophy. To complete this option, faculty will develop or refine a narrative statement of their teaching philosophy (AKA, Philosophy of Teaching Statement, Statement of Teaching, Statement of Teaching Philosophy, or Teaching Statement) that includes their conception of teaching and learning, a description of how they teach (preferably with examples), and a justification for why they teach that way. The goal is to demonstrate that the faculty member has been reflective and purposeful about their teaching and to communicate their goals as an instructor and their corresponding actions in the classroom or other teaching venue.

a. Evidence required:

1. Report of activities engaged in (e.g., workshops attended, books or articles read, consultations with experts) to support the process
2. Reflections on how the experience enhanced the philosophy of teaching, and
3. the completed product.

6. Observe another teacher. Make arrangements to watch another instructor teach a class. The instructor may be a faculty member or a graduate teaching associate whom the observer advises or mentors. Make arrangements to meet with that instructor prior to the class period to gain an understanding of the goals, purposes, and proposed teaching methods. Meet again after the completion of the class for debriefing. The goal of the evidence is to demonstrate what was learned from observing another instructor's teaching, as well as to describe any changes made to the observer's teaching that arose from insights gained during the observation process.

a. Evidence required:

1. Name, rank, institution, and subject area of teacher.
2. Summary and analysis of what was learned and what changes were made/will be made as a result (if any), and reflections on the process.

7. Make arrangements to have a class period video recorded. Identify a faculty peer or professional from the university center for teaching development to watch the videotape with, and use both self-reflection and the process of watching with another, to identify strengths and areas for growth.

a. Evidence required:

1. Name, rank, institution, and subject area of selected peer.

2. Date, course number, and topic of selected class period.
3. Summary and analysis of strengths identified, areas for improvement, and changes made as a result and reflections on the process.

8. Classroom observation by a non-EED faculty peer (either at [Specific School Name Excised] or another institution).

a. Evidence required:

1. Name of reviewer, course observed, date observed.
2. Summary of any changes made as a result and reflections on the process of the observation.

9. Classroom observation by professional from university center for teaching development

a. Evidence required:

1. Name of university center for teaching development professional, course observed, and date.
2. Summary of changes made as a result and reflections on the process of the observation.

10. Classroom observation by an EED faculty peer. Current EED guidelines, as outlined in this document, should be utilized. To initiate #10, a faculty member must request, in writing to the EED Chair or designee, that s/he has selected this option as part of the annual peer review and would like the Chair or designee to select an EED faculty peer reviewer. To submit the written request for review, faculty should use the mechanism described on the Departmental Information course. Faculty can find the format and specific documentation required for peer observation posted under the Departmental Information course on Carmen. This includes (at a minimum):

I. Peer evaluations of teaching should be detailed and should provide an analysis of the candidate's instructional skills.
II. Reports of observations should specify which courses were observed and at what point in the semester the observations took place.
III. The peer-observer should provide a copy of the evaluation to the faculty member and should meet with the faculty member to review the evaluation.
IV. The peer-observers will be selected by the EED Department Chair or designee.

a. Evidence required:

1. Name of reviewer, course observed, and date.
2. Summary of changes made as a result and reflections on the process of the observation.

CATEGORY TWO: Producing Scholarly Publications for Instructional Use

11. Scholarly textbooks, chapters in books used as texts, and other publications designed primarily for classroom and instructional settings are the object(s) of review in this category. Faculty members who select this option will obtain and evaluate feedback provided to them on a textbook, chapter, module, or other instructional material that they have authored.

a. Evidence required:

1. Identification of teaching material being reviewed, citation, and material file/link
2. Name, rank, institution, and subject area of reviewer OR indicate that feedback from students is being used

3. Summary and analysis of strengths and limitations of the material for classroom use, garnered either from external comments or reviews (e.g., publisher reviews, feedback from faculty members who use the material in their courses), or from internal reviews (e.g., comments and feedback from students, from other [Specific School Name Excised] faculty, from a self-reflection).
4. Description of changes the instructor made to teaching based on feedback. Evaluate the feedback and explain how the instructor has used the feedback to improve student learning. Based on the feedback, describe any changes or improvements that could be made in future additions.

CATEGORY THREE: Advising and Mentoring Undergraduate and Graduate Students

12. Faculty engage in formal and informal mentoring of advisees and other students. To complete this option, faculty members will reflect on their role in the mentoring of students. They must articulate a philosophy of mentoring and discuss methods they use to bring that philosophy to action. Thus, this should not be a listing of "noteworthy accomplishments" by students, but an analysis of the role the faculty member plays in the formal and informal mentoring of students.

a. Evidence* required:

1. A rationale for the types of mentoring in which the faculty member engages.
2. Some examples of the types of activities that support these types of mentoring.
3. Reflections on the faculty member's strengths and limitations in this area, with a plan for enhancement.

**Feedback from students (current and former) can be solicited to improve a faculty member's self-awareness, but should not be included as part of the evidence provided*.

CATEGORY FOUR: SCHOLARSHIP OF TEACHING AND LEARNING

13. Faculty engage in the scholarship of teaching and learning, publishing, best practices, and/or pedagogy. May include peer-reviewed publications in SOTL-focused journals or books, or presentation of papers at SOTL-focused conferences or professional organizations. *Faculty choosing this option may only select it once per academic year (i.e., two other options must be chosen to fulfill the annual three option requirement).*

a. Evidence required:

1. Identifying information (publication/presentation name, journal/book/conference title, date of presentation/publication, and location, if conference attendance is submitted for review).
2. Description of the insights about teaching captured in publication/presentation and how classroom instruction has been modified to incorporate changes based on publication/presentation.
3. The resource itself (submitted according to mechanism described on Departmental Information page).

PROCESS: FORMATIVE REVIEW OF POST-TENURE FACULTY

Annually, each tenured EED faculty member will select one (1) formative review option from those listed above. Additionally, tenured EED faculty will select two (2) of the activities below in order to contribute to faculty development:

14. Review the course materials of another faculty member (As directed in options #2, #3, & #4 above).
15. Be observed by another faculty member (As directed in option #6 above)
16. Watch a videotape of another faculty member's teaching and provide input and reflections (As directed in option #7 above)
17. Observe another faculty member's teaching and engage in the process of peer observation of instruction (As directed in options #8 and #10 above)

Tenured faculty members should provide as evidence:

1. A brief description of the activity engaged in.
2. Identifying dates, names, and courses.
3. A brief narrative with summary and analysis of what was learned and how the activity enhanced their own instruction.

PROCESS: SUMMATIVE REVIEWS

All faculty must complete a summative review every four years.

The summative review consists of a capstone narrative (no more than 1-2 pages) to be included in the annual review documentation that provides an overall summary of the candidate's professional development as an instructor during his/her status as a faculty member at [Specific School Name Excised]. This narrative should include, at a minimum, a description and reflection on the following, based on the previous four years:

- What have you learned about yourself as an instructor?
- How have you changed as an instructor?
- What new teaching skills and pedagogical strategies have you developed?
- In what ways have you enhanced the courses you have taught?
- In what ways have you promoted student engagement?
- What are your plans for future professional development as an instructor?

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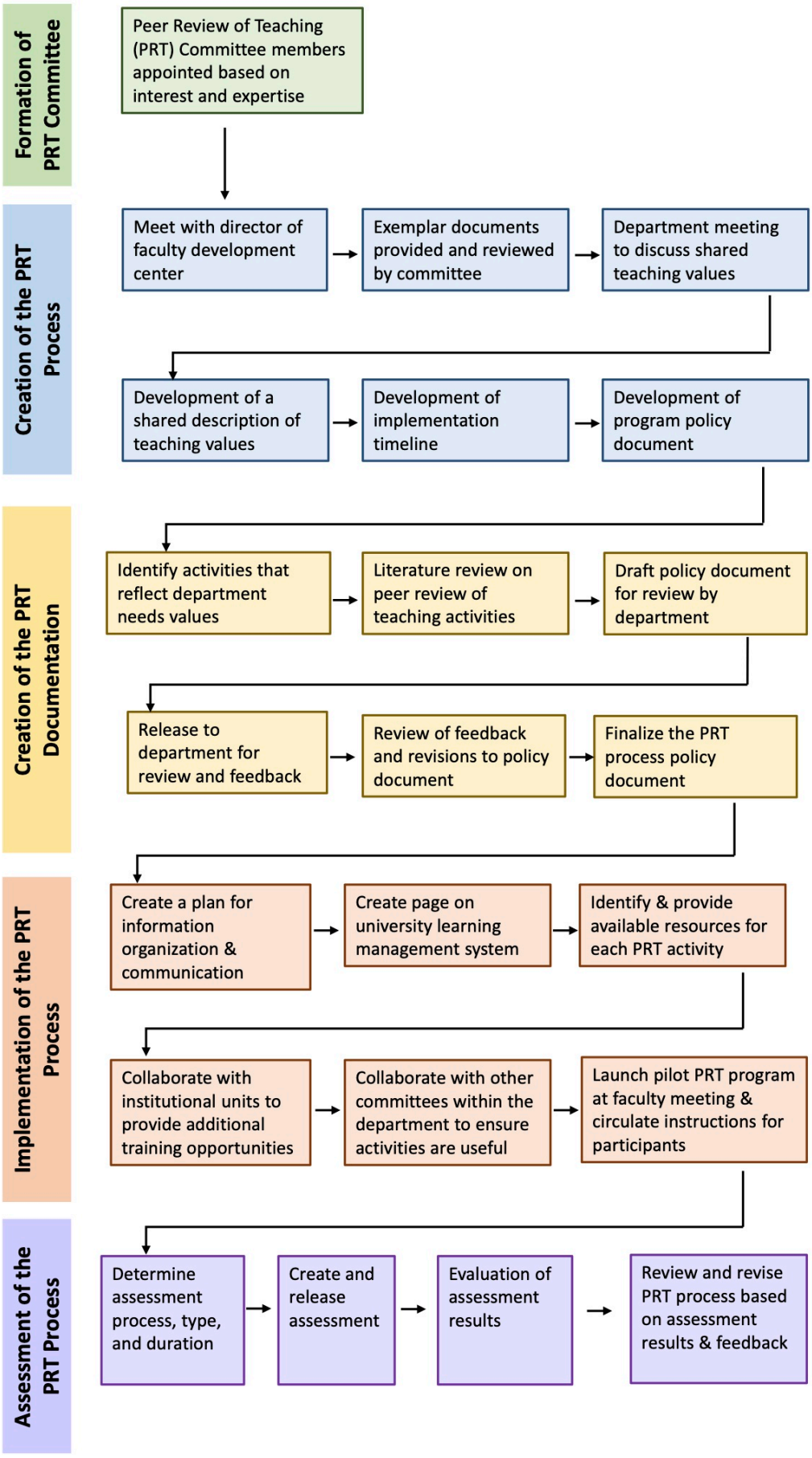
Appendix B


Formation of PRT Committee
Peer Review of Teaching (PRT) Committee members appointed based on interest and expertise
Creation of the PRT Process
Meet with director of faculty development center
Exemplar documents provided and reviewed by committee
Department meeting to discuss shared teaching values
Development of a shared description of teaching values
Development of implementation timeline
Development of program policy document
Creation of the PRT Documentation
Identify activities that reflect department needs values
Literature review on peer review of teaching activities
Draft policy document for review by department
Release to department for review and feedback
Review of feedback and revisions to policy document
Finalize the PRT process policy document
Implementation of the PRT Process
Create a plan for information organization & communication
Create page on university learning management system
Identify & provide available resources for each PRT activity
Collaborate with institutional units to provide additional training opportunities
Collaborate with other committees within the department to ensure activities are useful
Launch pilot PRT program at faculty meeting & circulate instructions for participants
Assessment of the PRT Process
Determine assessment process, type, and duration
Create and release assessment
Evaluation of assessment results
Review and revise PRT process based on assessment results & feedback