
Applied Mathematics

Clarifications formally approved on: 4/29/2026

1.1 – Instruction Core Criterion: A faculty member must clearly be contributing to the instructional mission.

The department of applied mathematics serves several important institutional objectives through its teaching activities. Hence, high quality teaching is the top priority for the department of applied mathematics. Indeed, the department plays a critical role in the STEM core and provides several courses that serve other departments. Mathematics faculty must, over time, demonstrate significant breadth in instructional capacity.

1.2 – Overall Criterion Considerations & Requirements

(A) A faculty member must clearly be contributing to the instructional mission

An important piece of the department mission is to teach STEM core courses. Faculty can demonstrate their contribution to that end through their ability and willingness to teach such courses effectively. Moreover, faculty in applied mathematics are expected to demonstrate instructional versatility across a broad range of courses, from foundational STEM and engineering service courses to advanced mathematics, recognizing that opportunities to teach upper-level courses may be limited by departmental needs and scheduling.

(B) Instructional effectiveness

Faculty should employ best and varied pedagogical practices that ensure student engagement, which may include an effective use of technology that promotes student development.

(C) Student assessment of instruction

Faculty should demonstrate meaningful consideration of student evaluations. Positive student evaluations are valued by the department, as are changes in instructional practice that are a result of carefully considered student feedback.

1.3 – Factors to consider in terms of “effort“

Course coordination in the Applied Mathematics Department often results in extensive added responsibilities. The time demands on a course coordinator are substantial and, in practice, often exceed eight hours per week for multi-section courses. Despite this workload, course coordinators generally do not receive a course release and frequently teach in one or more additional courses concurrently.

1.4 – Factors to consider in terms of “quality”

The department provides service courses for a wide range of majors, such as Precalculus, Calculus I, Calculus II, and Introductory Statistics. Students in these classes may struggle not only with mathematical concepts but also with the transition to a new college environment. However, faculty are still expected to hold all students to a high standard. As a result, retention rates in these lower-division courses may differ from those in upper-division courses, where students are more experienced, self-motivated and engaged. Given these factors, the evaluation of mathematics teaching should account for these challenges and be approached with criteria that recognize the distinct nature of these courses.

Most students in mathematics courses are in other degree programs. Hence, the department values the positive use of discipline-specific applications appropriate to students in the course. Such applications provide context and may increase engagement with the material.

1.5 – Further Criterion Considerations

The department places a high value on professional development intended to improve instruction and course delivery. Ongoing curriculum development is valued, as is the design of course elements where the instructor has freedom beyond the catalog description and core topics.

2.1 – Scholarly Activities Core Criterion: a faculty member has a unique and scholarly expertise in 2. their field and has activity that aligns with this professional direction.

2.2 – Further Criterion Considerations

(A) Directing thesis committees or project advisory groups

Applied Mathematics does not currently have an active graduate program or one in immediate development. Faculty may be involved in thesis committees for other departments. Interdisciplinary collaborative research efforts with faculty in other departments is valued and appropriate.

(B) Publications and patents

Due to the nature of applied mathematics research, faculty are unlikely to file patents. Therefore, a lack of patents should not be viewed negatively for promotion and reappointment.

(C) Articles published... (more specialized venues of publication)

(D) Multi-author publications

The ordering of the authors in the citation is typically done alphabetically in mathematical publications and should therefore not be considered indicative as the amount of author contribution. Author contribution should be assessed based on descriptions in the candidate's dossier.

(E) Articles that are simply the result of student work

Papers produced by students under faculty supervision are a result of significant effort from the faculty and the students and should therefore be treated similar to other collaborative work where the contribution of the faculty is based on the description in the dossier.

(F) Provisional patents

Due to the nature of applied mathematics research, faculty are unlikely to file patents. Therefore, a lack of patents should not be viewed negatively for promotion and reappointment.

(G) Patents that have been granted

Due to the nature of applied mathematics research, faculty are unlikely to file patents. Therefore, a lack of patents should not be viewed negatively for promotion and reappointment.

(H) Activity with industrial partners

Some areas of work in applied mathematics such as data science and mathematical computation may have direct impact on Business, Industry, and Government, but many areas will not.

(I) Research, creative and scholarly activity

Applied Mathematics research is a broad and ill-defined area of scholarship. Mathematicians often work across diverse areas that may be far removed from their original area of study. Often, mathematicians explore brand new and emerging fields such as those related to data science. While obtaining new results is important and is highly valued, the mathematics community also places high value on publications that brings clarity to the theoretical work of others, provides unexpected connections between topics, re-visits historically important work in a modern light, finds novel applications of known results, and makes mathematical research areas accessible to a wider audience including researchers from other disciplines. Interdisciplinary papers, even as last author, are viewed as equally important since such papers strengthen relationships and collaborations with other departments/universities, while facilitating communication between mathematics and other subjects. It is therefore appropriate for math faculty to publish papers that extend, translate, and apply mathematical results in quality journals outside of the mathematical domain.

The scholarship of teaching and learning (SoTL), which involves the systematic investigation of a question about teaching or learning using sound methodology that is grounded in the literature and subject to peer review, is also highly valued and can contribute to the overall body of scholarly work. However, SoTL research should not be the only contribution to the research portfolio in an application for promotion to associate professor.

All the aforementioned types of peer-reviewed publications are appropriate for faculty at undergraduate-focused institutions such as Florida Poly. The department values scholarly work that engages students in mathematics. Papers published in collaboration with students and for students are important for the reputation of the institution.

The expository standard in mathematics journals tends to be very high. As an example, journals published by the Mathematical Association of America have a large readership and acceptance rates below 10%. Moreover, the publication cycle is often 18 – 24 months from submission to print. It is difficult for mathematics faculty to publish many papers in high-quality journals. Due to the wide range of journals in the mathematical sciences, the Department Evaluation Committee will include a discussion of the journal quality present in a faculty member's record of scholarship. Also, very few mathematics conferences have refereed conference proceedings. Conference presentations, both in contributed and invited paper sessions, at recognized conferences, while not equivalent to publications in refereed conference proceedings, is highly valued by the department and can be an important supplement to a faculty member's publication record.

2.3 – Proposal and grant application

Much of the research done in Applied Mathematics doesn't require funding, so faculty may not apply for grants. It is not common for faculty to get individual research grants. A collaborative effort to pursue funding that enhances the profile of the department is highly valued, including grants aimed at improving teaching and learning in

mathematics. The department recognizes that unsuccessful applications can be an important part of the process toward obtaining grants, and therefore values quality peer-reviewed applications, even if they are not funded. Grant activity should be viewed as part of a faculty member's overall scholarship profile.

3.1 – Service Core Criterion: a faculty member is contributing to their department and profession in a positive way.

Applied Mathematics Faculty can in some cases encounter limits on the amount and type of service available. Service opportunities can be competitive due to the number of faculty and their rank.

Leadership in the Applied Mathematics Department may take several forms such as course coordination, department committee chair, and coordinating university engagement with the community.

3.2 – Further Criterion Considerations

(A) no service activity of significance overall for a multi-year period is strong cause for concern

(B) Simply being a member of a committee is not an indication of service contribution

(C) Service to one's professional society

(D) Service can include hosting a conference, outreach to the community that is coordinated with the university, judging internal and external competitions, community service that is coordinated with the university

4.0 – Overall Core Criterion: criteria notes, appropriate to rank and reappointment and/or reappointment: strong, ongoing contribution to the University, ability to perform their full suite of duties with a high degree of quality and independence by demonstrating accomplishment in teaching, appropriate trajectory in research, and service that positively advances the University, department, and program