

From: [Steele, Rachel](#)
To: [Humanic, Thomas](#); [Poirier, Michael](#)
Cc: [Ottesen, Jennifer](#); [Vankeerbergen, Bernadette](#); [Steele, Rachel](#); [Cody, Emily](#); [Hilty, Michael](#)
Subject: Computational Physics Certificate
Date: Wednesday, February 8, 2023 9:21:03 AM
Attachments: [image001.png](#)
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Good morning!

On Wednesday, Jan. 25th, the Natural and Mathematical Sciences Panel of the ASC Curriculum Committee reviewed a new certificate proposal for the Computational Physics Certificate.

The Panel did not vote on the proposal as they would like the following points addressed:

- a. The Panel asks that the department include with the proposal a cover letter on departmental letterhead that is signed by the department chair and/or the Vice-Chair for Undergraduate Studies.
- b. The Panel requests that the department submit with the proposal the concurrence from the Department of Electrical and Computer Engineering that is mentioned on pg. 3 (item #3, Relationship to Other Programs/Benchmarking).
- c. The Panel notes that one of the required courses for the certificate, Physics 5810, is not yet a fully approved course. Currently, the course still exists as Physics 6810; a course change request to change the course number and the pre-requisites was reviewed by this Panel on Sept. 8th, 2022, and revisions were requested on September 20th, 2022. As of Feb. 1st, 2023, a revised Course Change Request has not yet been received by ASC Curriculum and Assessment Services. The Panel asks that the department revise that Course Change Request and re-submit it for review, as the Computational Physics Certificate cannot be approved until Physics 5810 is a fully approved course.
- d. The Panel asks that the department address the following issues having to do with the assessment of the certificate.

The Panel requests that the department provide information on how the first two learning outcomes for the certificate (proposal pg. 2) will be assessed. For example, will the department use pre- and post-tests or embedded questions in certain courses or certain specific questions that will clearly indicate that the learning outcomes have been achieved? For the first two learning outcomes, the Panel asks that the department present sample examples of direct assessment methods (e.g., specific classroom assignments). The Panel recommends that the department consult with the College's Assessment Coordinator, Dan Seward.65, to create a more comprehensive assessment plan for the certificate.

The Panel notes that some of the measures earmarked for assessment (number of applications for the program, quality of the acceptant pool, and acceptance rate etc.) seem to indicate that students will have to apply to the certificate. The proposal, however, does not include any information about an application process. If the program requires an application, the Panel asks that the department provide more details about the application and the application process. If there is not an application, the Panel asks that the department remove these items from the assessment plan (proposal, pg.3).

- e. The Panel asks that the department provide more information about the administrative structure that will govern the certificate so that there is a clear path for assessing the certificate, making changes to the certificate, or managing other administrative issues that may arise.
- f. The Panel asks that the department amend the "Certificate approval" section of the advising

sheet (found in the right-hand column toward the bottom). Specifically, they ask that the unit give students and academic advisors (both ASC and non-ASC) a contact within the Physics Department who can be consulted if the certificate coursework is not confirmed via the Degree Audit Report. The current wording refers students to any advisor in the College of Arts and Sciences; not all ASC advisors would have the expertise to review this. The Panel asks that the department replace the more general “a College of Arts and Sciences advisor” (in the phrase “the student must consult with a college of Arts and Sciences advisor”) with a specific name or names of advisors in the department who will be able to assist students.

g. The Panel asks that the department add to the description of the certificate on the advising sheet some information that communicates to students that there are significant pre-requisites for all required and elective courses, and that students who are outside of the physics, engineering physics, and astronomy majors should speak with an academic advisor before attempting to pursue the certificate. For example, Physics 5500, which is a pre-requisite for 5810/6810, has a number of pre-requisites itself, including a specific combination of math and physics courses that are rarely taken by students outside of the targeted majors.

h. The Panel asks that the department address the following issues having to do with pre-requisites for the certificate’s required courses (Physics 5680 and Physics 5810):

The Panel notes that one of the required courses for the certificate, Physics 5680, has a pre-requisite of enrollment in the Physics, Engineering Physics, or Astronomy majors. If the department wishes for the certificate to be open to students in other majors, the department may want to adjust this pre-requisite so that permission does not have to be obtained by outside students, especially since the department plans to market the certificate to Electrical and Computer Engineering majors as well.

The certificate proposal (pg. 5) lists the pre-requisites for Physics 5810 as “CSE 1222, CSE 1223, CSE 1224, Astronomy 1221, Engineering 1221, or Engineering 1281H; and Physics 5500, or instructor permission”. The course change request for Physics 5810 (currently in progress, please see item 2c above,) does not list instructor permission as a possibility for fulfilling the course pre-requisites, which could keep students from outside these majors from enrolling in the course. The Panel asks that this discrepancy be rectified.

i. The Panel asks that the department remove all references to courses from the quarters system (indicated by three-digit course numbers) on pgs. 5 and 6 of the proposal.

I will return the Computational Physics Certificate to the department queue via curriculum.osu.edu in order to address the Panel’s requests.

Should you have any questions about the feedback of the Panel, please feel free to contact Jennifer Ottesen (faculty Chair of the NMS Panel; cc’d on this e-mail), or me.

Best,
Rachel



Rachel Steele, MA

(Pronouns: she/her/hers / Honorific: Ms.)

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