From: Neff, Jennifer
To: Andrews, Adam; Sabel, Jaime
Cc: Hadad, Christopher; Vankeerbergen, Bernadette; Steele, Rachel; DeGirolamo, Anne
Subject: New Bachelor of Science & New Minor - Biotech Science
Date: Tuesday, December 23, 2025 4:58:00 PM
Attachments: image001.png

Good afternoon,

On Thursday, December 11th, the Natural and Mathematical Sciences Subcommittee of the ASC Curriculum Committee reviewed proposals for a new Bachelor of Science and a new minor in Biotech Science.

The Subcommittee declined to vote on the proposals at this time, and they ask that the following feedback be addressed in revisions:

- Bachelor of Science - Biotech Science:
  - The Subcommittee has several concerns regarding whether the proposed Major in Biotech Science incorporates adequate laboratory exposure and experience, as well as the development of applied skills. The Subcommittee requests that the proposers rethink some fundamental components of the program. Specifically, they request the following:
    - The Subcommittee notes that the proposal states, "the proposed Biotech Science Major housed in the College of Arts & Sciences will focus on core molecular techniques, both theoretical and applied" (pp. 12-13); however, they find the proposed curriculum requires very little for "applied" as there is only one required laboratory course. Additionally, the proposal identifies this program as offering a "curriculum that is more applied than would be found in more broad, interdisciplinary Majors such as Biology" (p. 12); yet the Subcommittee notes that the Biology Major requires three laboratory courses while the proposed Biotech Major only requires one laboratory course. The Subcommittee requests that the program proposers re-evaluate the structure of the major to include more required or elective laboratory exposures and experiences.
    - The proposal states that, "Addressing the employment needs of Ohio's biotechnology industry has been one of the driving forces behind the development of this Major" (p. 5); however, the Subcommittee is concerned that the proposed curriculum does not adequately prepare students with the applied skills required in industry positions. They request that more information be provided about which specific courses provide the applied skills required for successful careers in industry positions.
    - Similarly, the Subcommittee points to the Program Goal and Associated Learning Outcome 2b on p. 4 of the proposal as a key component of the

major and encourages the proposers to focus on, and consider, what are the minimum skills/techniques every graduate should have and then identify specific core courses that will be required of every student to ensure that ELO 2b is met.
        - The Subcommittee recognizes the potential opportunity for practical skill development in the 3-credit hour research course requirement (4998/4999) but notes that enrollment in these courses can include a breadth of experiences, some with more practical applications than others. The Subcommittee would like to see the research experience augment a skills-based foundation as outlined above.
    - The Subcommittee notes that the proposal states, "The major is anchored by two courses: an Advanced Biotechnology course and a Seminar" (p. 12); however, only one version of the Advanced Biotechnology courses has been approved (Micro 4800). The Subcommittee requests for the remaining Advanced Biotechnology courses to be submitted for review before the Major proposal continues in the review process. We understand that MolGen 4810 and EEOB 4840 are developed and can be submitted for review. As for Biochem 4820, we understand that that course will be developed in a few months. Should the major proposal be resubmitted for curriculum review before the course is also developed, references to Biochem 4820 should simply be removed from the major proposal. The course can be added to the major at a later date.
    - The Subcommittee would like to better understand the rationale for not requiring Physics coursework as part of the Required Supporting Courses for the proposed Biotech Major. They note that this is briefly addressed on pp. 11-12 of the proposal; however, they request additional information be provided regarding the curricular development without Physics. They also note that several students who change their major to Biotech from programs such as Biology and other Life-Science Majors will change majors having already completed Physics. The Subcommittee would like clarification how previously completed Physics coursework fits into this proposed program.
    - The Subcommittee offers the friendly note that "data" is plural, so "this data" should be "these data" and "data is" should be "data are". They request for those occurrences to be corrected throughout the proposal.
    - The Subcommittee asks that the Marion proposal be submitted separately after the Biotech proposal has been approved.
- Minor - Biotech Science
    - The Subcommittee has similar concerns with the proposed Minor in Biotech as they do with the proposed Major in Biotech regarding whether the proposed minor incorporates adequate laboratory exposure and experience, as well as the

development of applied skills. The Subcommittee requests that the program proposers reevaluate the structure of the minor to include a required laboratory component.

- The Subcommittee notes that a Core Course Requirement on the minor will be one of the four Advanced Biotechnology courses; however, only one version of the Advanced Biotechnology courses has been approved (Micro 4800). As with the Major proposal, the Subcommittee requests for the remaining Advanced Biotechnology courses (MolGen 4810, EEOB 4840, and Biochem 4820) to be submitted for review before the Minor proposal continues in the review process. Should Biochem 4820 not be developed by the time the minor is resubmitted to the NMS subcommittee, please remove references to the course in the proposal.
- The Subcommittee requests additional clarification in Item 2: Rationale (p. 3) to more clearly explain the value of the proposed minor. As written, the Rationale closely mirrors that of the proposed BS in Biotechnology Science, which makes a case for the need for a standalone degree by outlining workforce outcomes that require completion of the full major. By contrast, the minor proposal does not clearly articulate why a minor is necessary or what distinct value it would add for students who do not pursue the BS. In light of this, the Subcommittee asks the proposers to clarify the specific role the minor is intended to serve, what distinct and added skills or competencies it provides, and why a student would benefit from completing the minor rather than (or in addition to) related coursework within their major.
- The Subcommittee notes that, according to university policy, only one course in the 15-credit minor may overlap with a student's major and asks whether the major curriculum of likely student populations has been considered in the design of the minor to ensure that students can feasibly complete the minor alongside their degree requirements.
- The Subcommittee notes a suggestion from the College of Food, Agriculture, and Environmental Sciences offered in their concurrence on p. 36 of the proposal to consider adding HCS 5625 (Applied Plant Biotechnology) to the proposed Minor as an elective option. They note this course is listed as an elective option on the proposed Biotech Major and the Subcommittee inquires if the proposers considered the suggestion of adding HCS 5625 as an elective in the Minor.
- The Subcommittee notes that a letter of support for the proposed Biotechnology Science degree from the Dean of Natural and Mathematical Sciences was included in the Minor proposal; however, they request that the letter from the Dean included in proposal be specific to the proposed Minor.
- The Subcommittee notes that the proposal for the Biotech Major has more steps to go through in the review process and may receive feedback that could be

helpful to both the major and minor. As a result, they offer the friendly suggestion that the minor proposal could be submitted after the Biotech Major proposal has been approved.

I will return the proposals to the unit queue via curriculum.osu.edu in order to address the Subcommittee's requests.

Should you have any questions about the feedback, please do not hesitate to reach out to Christopher Hadad (faculty Chair of the NMS Subcommittee) or me.

Best,
Jennifer

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