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To: UFS Steering Committee
From: Ashkaan K. Fahimipour, Florida Atlantic University
Date: 01.17.2025
Subject: Distinctions Between BSC 4884 and BSC 6885

Dear UFS Steering Committee:

I am writing to address the distinctions between the undergraduate course BSC 4884 (Introduction to Biological Networks) and the graduate course BSC 6885 (Biological Networks). While the two courses share a topical outline and materials, the expectations, depth of engagement, and evaluative criteria for graduate students differ substantially to reflect the higher academic level and research-focused learning goals of BSC 6885.

Differences in Coursework and Expectations

1. **Depth of Assignments:** Graduate students are required to complete additional Tier 2-difficulty problems on all homework assignments, which demand a deeper level of quantitative reasoning and independent computer code development. Undergraduate students complete Tier 1 problems, which are less complex and more guided.

2. **Independent Research:** A cornerstone of BSC 6885 is an original research project, where graduate students must propose, implement, and analyze a novel extension of the methods and models introduced in class. This includes synthesizing external datasets or theoretical frameworks and presenting findings in a formal seminar format. Undergraduate students, by contrast, complete a more structured project focused on applying taught methods to predefined problems.

3. **Specialized Readings:** Graduate students are assigned additional peer-reviewed research papers and chapters from advanced texts to explore the theoretical underpinnings and new developments in biological networks. These readings allow for a more comprehensive understanding of the subject matter and support independent research projects.

4. **Mentorship Roles and Evaluation:** Graduate students will act as near-peer mentors, assisting undergraduate students during designated workshop sessions focused on project development. Graduate students will provide written feedback to their undergraduate mentees, offering guidance on project design, implementation, and interpretation. Their mentorship will be assessed based on their ability to convey advanced concepts effectively, facilitate undergraduate understanding, and support the successful development of undergraduate projects. This mentorship role reinforces graduate students' mastery of course material while cultivating their teaching and leadership skills.

5. **Leadership in Discussions:** Graduate students are expected to lead class discussions on cutting-edge biological applications, analyzing and critiquing peer-reviewed literature. Undergraduate students participate but are not required to lead.

6. **Assessment Criteria** Assignments and projects for graduate students are graded on advanced problem-solving ability, originality, and the integration of biological insights. Undergraduate assessments emphasize foundational understanding and application.

Additional Notes

The shared structure of these courses ensures coherence across learning levels while allowing graduate students to explore more advanced topics and independent inquiry. The distinct expectations align with the pedagogical goals for each academic level, fostering foundational skills in undergraduates and advanced research capabilities in graduate students.

Please let me know if further clarification or additional details are required.

Sincerely,

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