TO: Undergraduate Studies Committee

From : Department of Biomedical Engineering

Subject : Increasing Awarded Credits for BME 315, BME 405 from 1 Credit to 2 Credits

Background

- Both the courses BME 315 (Instrumentation and measurements) and BME 405 (Physiology) are required laboratory courses for undergraduate students for all tracks.
- The lab modules in both courses cover hands on experiments, analyzing data, and communicating the data with written reports and oral presentations.
- Students also work on designing the lab modules and presenting them in class.

Problem

- The workload in both lab courses is not proportional to the 1 credit earned by students.
- Because of the low credits and workload, we cannot modernize the lab modules and introduce important topics into the course material.
- BME is the only department in Armour College where labs are only 1 credit.

Action

- Redistributing/Adjusting the credits from computational course “BME computer applications” (BME 200).
- Eliminate this 2-credit course (BME 200) and redistribute those credits to BME 405 and BME 315.

Rationale

- Students are introduced to MATLAB in CS 104 and get an introduction to digital tools and 3D experience platforms in BME 100 in collaboration with IDMET at Illinois Tech.
- Students also get exposure to advanced MATLAB concepts in BME 422.
- Students will be exposed to track specific computational methods using MATLAB and Python to solve the biomedical engineering problems.
- After increasing the credit limit from 1 credit to 2, we will have the same number of contact hours as CHE 317 (2 Credits) and CHE 418 (2 credits).

Adjusting the Effected Students

- We have four students who are taking BME 315 (1 credit) this semester (Fall 22) without taking BME 200.
- In Spring 23, these students will be offered with an independent study BME 497 focusing on computational methods and application to BME.
- Dr Tichuer has graciously offered to help with the independent study.