1. Course number and name: BMED 3110 Quantitative Engineering Physiology Laboratory I
2. Credits and contact hours: (1-0-3-2)
3. Prepared by: Essy Behravesh
4. Textbook: None
5. Specific course information
    a. Catalog description: A hands-on lab providing an active learning team environment to reinforce selected engineering principles of physiology, emphasizing a quantitative model-oriented approach to physiological systems.
    b. Prerequisites or co-requisites: BMED 3400 and BMED 3100 (w/concurrency) and BMED 2400 (w/concurrency) or CEE/ISYE 3770 (w/concurrency)
    c. Required
6. Specific goals for the course
    a. Read, understand, and apply knowledge gained from scientific literature (Student Outcomes 7)
    b. Design and conduct experiments involving biomedical systems (Student Outcomes 3, 5, and 6)
        i. Design and conduct experiments involving biomedical sensors
        ii. Quantitatively measure, statistically analyze, and interpret experimental data from living systems
        iii. Work with a team to design, execute, and report the results of an experimental design project
    c. Address challenges associated with the interaction between living systems and nonliving materials and systems when designing and conducting experiments (Student Outcomes 6)
7. Brief list of topics to be covered:
    a. Introduction to planning and working with hardware
    b. Gross anatomy and biosignal analysis of the heart
    c. Smooth muscle noisy signal analysis
    d. Standards used in mechanical testing
    e. Frog muscle models
    f. Completing an open-ended team-based project