

COLLEGE OF ENGINEERING HONORS SYLLABUS

COURSE: BME 25600, Physiological Modeling in Human Health

ACADEMIC PERIOD: Spring 2021

HONORS CONTRACT OBJECTIVES

The objectives of completing the work associated with the Honors contract for this class are:

- To build teamwork skills that model an engineering work environment typical for an internship or career in BME research and development
- To introduce students to the physiology and medicine underlying practical problems in biomedical engineering, especially with respect to medical device development
- To introduce students to the process of mathematical modeling of human anatomy and physiology, including technical description of objectives, methods, results, and conclusions from modeling exercises
- To put more biology and medicine into biomedical engineering

HONORS CONTRACT DELIVERABLES

Beyond the two problem sets given to the class as required assignments, Honors students interested in contracting this course may complete a third problem set to explore a particular topic of their choosing. This problem set may either be chosen from a list or developed from scratch and approved by a course instructor. Honors students interested in completing the contract assignment will be placed in groups of three to four students for the additional problem set. The problem set should take 5 hours per week per student over the course of 5 weeks to complete, or around 2 hours per week per student over the duration of the semester.

HONORS CONTRACT DEADLINES

The final deadline for the problem set report is Friday, April 30th.

HONORS CONTRACT EXPECTATIONS

As Honors BME students, those wishing to fulfill an honors contract for this course will be held to at least the same standards for meeting with group members and completion of high-quality work as students completing normal coursework. This means maintaining an adequate level of responsibility needed to coordinate all meeting times and completion of project work without intervention from the instructional team, as with the normal problem sets.

HONORS GRADING SCHEME

The third problem set will be included in the problem set grade category worth 46% of the final grade. The problem set will be graded using the same rubric as the previous two problem sets.

ADDITIONAL INFORMATION

There are two problem sets each semester, requiring 5 weeks work to complete. On average, problem sets should take 5 hours per week per student to prepare. Scheduling two, one-hour group meetings and three hours of individual work each week is recommended. A good plan that helps with personal growth toward professionalism is to meet regularly each week to work on problem sets and to avoid procrastination.