Bioengineering/Physiology 6000

System Physiology I: Cardiovascular, Respiratory, and Renal Systems

Description
The goal of this course is to understand the concepts and mechanisms of systemic cardiovascular physiology in human and a variety of animal systems. The course assumes a basic knowledge of human physiology. We build on that knowledge by examining the adaptation of other species to maintain homeostasis. We will also introduce pathophysiological mechanisms relevant for clinical diagnosis and therapy. There is substantial emphasis on engineering approaches, quantitative methods, and simulation.

The prerequisite for the course are knowledge of university undergraduate level calculus and physics.

Assignments will require the use of Matlab and other software. All course materials will be available through the University of Utah Canvas software and the class will communicate using this software.

Essentials
Class times: Wednesday and Friday, 9:10-10:30
Classroom: MEB 2325
Labs: Friday, 1:00-4:00 and Monday, 1:00-4:00 in MEB 1480

Instructors
Frank Sachse (frank.sachse@utah.edu)
TAs: TBA

Schedule
See Canvas

Textbook
Constanzo, Physiology, 5th Edition
Additional readings will be assigned throughout the course.

Grading
45% Exams - exams I, II, and III with 15% each
30% Laboratory exercises
20% Semester Project
5% Homework assignments