BIOL 565 (Fall)
Cell and Tissue Mechanobiology

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Workload: 3 credits (3-0-6)

Prerequisites: One 300-level cell biology course or equivalent and/or instructor's approval.

Restrictions: Restricted to senior undergraduate and graduate students of the Faculty of Science, Faculty of Medicine, and the Department of Bioengineering, who fulfill the prerequisites or those approved by the instructor. Enrolment restricted to 25 students.

Content: During tissue development and homeostasis, cells interact mechanically with other cells and with their environment. In three modules, this course explores the emerging field of mechanobiology and mechanotransduction, and their relevance in the context of multicellular physiology in health and disease. In the first module, the molecular and cellular foundations of mechanobiology are covered. During the second module, current literature on the topic will be presented and discussed by students. In the third module, students will identify gaps in current knowledge and propose research to address them. Although this course will be delivered remotely in Fall 2020, the interactive teaching style of last year's version of this course will be maintained with live-discussions, student presentations, and work on research proposals in teams.

Readings: No required text book. Recent research articles and reviews.

Method: Faculty lectures (first module), in-depth discussion of primary literature (second module), and work on a research proposal (third module). Two 1.5h sessions per week.

Evaluation: Based on a quiz, an oral research paper presentation/discussion, a research proposal, presentation of the research proposal, and participation.