Title: Cell Mechanics and Mechanobiology [3-0-0-6]

Content *:*

Mechanical forces are known to play an increasingly important role during development, normal function as well as in disease. This course will focus on the physical interactions between cells and their surroundings. Students will learn how cells sense and respond to external forces and cues, and how these mechanical inputs influence subcellular biochemistry and cell behavior. They will also study various experimental techniques that have been developed for probing cell structure, manipulating cells and measuring their mechanical properties.

Texts / References:

1. B. Alberts, D. Bray, J. Levis, M. Raff, K. Roberts & J. D. Watson: Molecular Biology of the Cell; 5th Ed, Garland Science Fung, Y. C.:
2. Biomechanics: Mechanical Properties of Living Tissues. 2nd Ed., Springer.
3. R. Kamm and M. K. Mofrad. Cytoskeletal Mechanics: Models and Measurements. Cambridge University Press