Experimental Methods for Biological Machines

Spring 2012

BIOE 498: CRN 31791 | ME 498: CRN 58103

4 credit hours

Live videoconferenced lectures

UIUC campus on Mondays and Wednesdays, 3:30-5:00 PM CST

Taught by Illinois Professors Rashid Bashir, Minh N. Do, Martha Gillette, Hyun Joon Kong, K. Jimmy Hsia, Gabriel Popescu, Taher Saif, Paul Selvin, Fei Wang, Ning Wang, Yingxiao Wang

Prerequisites: Undergraduate level basic chemistry, physics, biology, and materials courses, or instructor's consent

The goal of this course is to introduce to the students unique experimental methods that are important to successful research in developing biological machines. These methods are in general not covered in standard experimental courses at most universities, and often not included in text books. The EBICS Graduate Teaching Consortium provides an opportunity for students to be exposed to a broader selection of experimental methods, and develop potential inter-institution collaborations.

Course Topics

- 3-D Biofabrication
- Hydrogel assembly for 3D cell culture
- Image analysis and processing
- Microfluidic neuro-engineering
- Multiple-site FRET imaging
- Quantitative phase imaging

Emergent Behaviors of Integrated Cellular Systems

STC GTC

www.ebics.net

NSF