Biomedical Engineering 274
Principles and Applications of BioMicroElectroMechanical Systems (BioMEMS)
Syllabus
Taught as BME 290d, Fall, 2003

Introduction to BioMEMS

Introduction to Cell Electrophysiology
11 Sept 2003 Wikswo lecture

Silicon Microfabrication
16 Sept 2003: Si Crystal Growth; Ion Implantation and Doping; Etching of Si, Wet Etching; Dry Etching; Deposition Methods

Polymer/Photoresist Chemistry

Cell Culture

Microfluidic Pumps

Electrochemistry

Fluorescence Sensing
28 Oct 2003: Fluorescence Techniques Intro to Fluorescence Techniques -

**Electrodes**


**Immunology**


**Cytosensor**


**Nanofilters**


**Vias and Crossovers in Microelectronics and Microfluidics**


18 Nov 2003: No class. Schedule INDIVIDUAL Project Reviews/Discussions with John Wikswo

**Cell-Based Neural Networks**


25-27 Nov 2003: No class - Thanksgiving Break

**Cytometers**

2 Dec 2003


4 – 11 Dec 2003: Student presentations:

16 Dec 2003 -- No Class -- Reading Day

18 Dec 2003 -- No Class -- Final Paper/Report/Project due