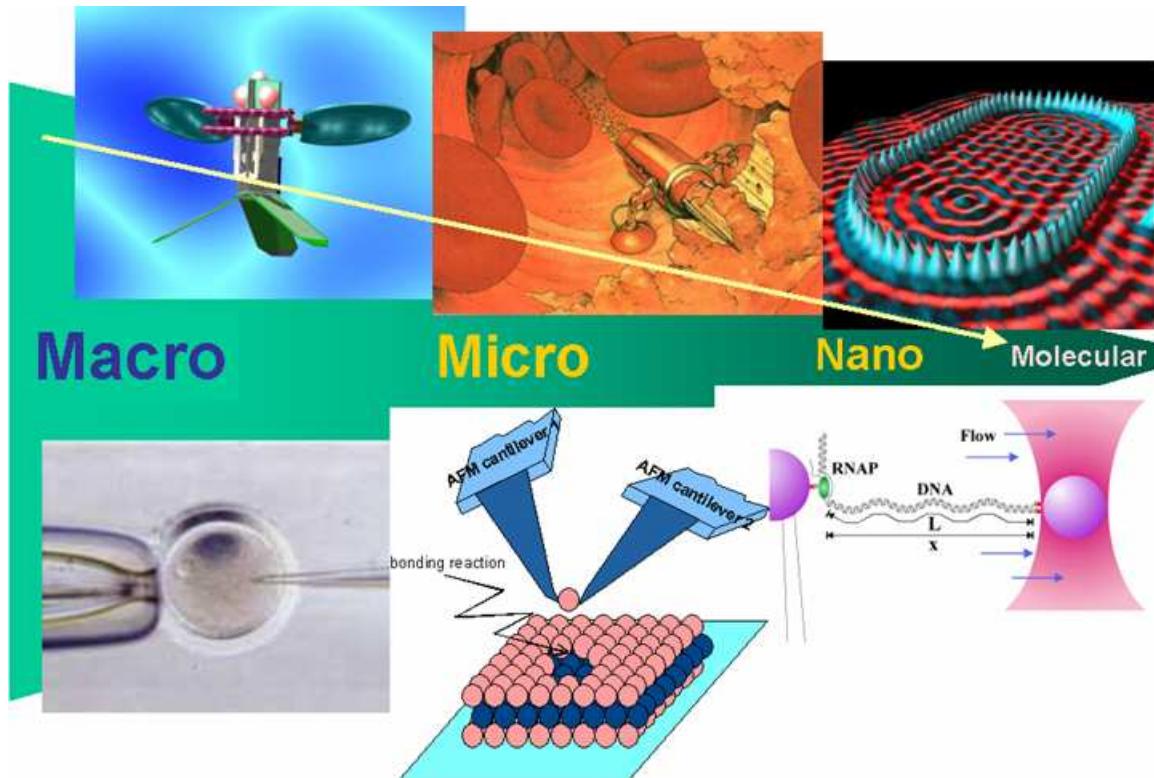


Special Topics in Controls and Robotics:

24779-A: Micro/Nano-Robotics



Instructor: Metin Sitti (msitti@andrew)

TuTh 1:30-2:50 pm, SH 212, 9 Units

<http://www-2.cs.cmu.edu/~msitti/24779/>

Course Objectives: This first-time interdisciplinary course focuses on the design, construction, analysis, and control of the state-of-the-art micro/nano-robotic systems for the MechE, Robotics, ECE, BioE, etc. students working on MEMS, nanotechnology, biotechnology, and robotics fields. It would cover the micro/nanoscale physics, sensors, actuators, manipulators, power sources, interfacing, robotic design, and control issues. After the basic background, it would include the current trends in the literature, detailed case studies, and guest lecturer talks. Active student participation, interaction, and in-class discussions are the main objectives!

Evaluation Method: Final group projects of challenging novel micro/nano-robotic systems for micro/nanotechnology, biotechnology, medicine, entertainment, etc. applications will be conducted. Some homework will be assigned and a literature review report will be required.

Prerequisites Required: Graduate level (upper level undergraduates with the instructor's permission). It is advantageous, but not required, to have the MEMS, Bio-MEMS, Robotics, Advanced Physics, Control, and Nanotechnology related courses beforehand.