

# Spring Course: Fundamentals of Nanoscale Science and Engineering

## Interested in Nanotechnology? Check out this Special Topics Class!

**Primary instructors:** Bruce Seely and John Jaszczak  
**Course numbers:** Students may register under any of these designations:  
PH 4999 (13928)  
SS 4000 (13929)  
MY 4970 (13931)

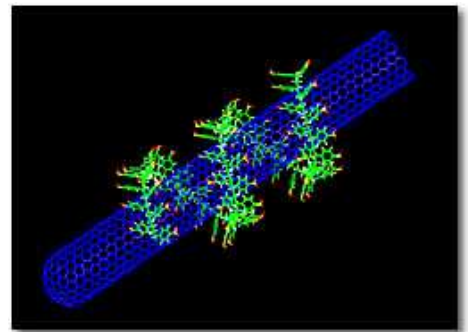
**Time and Room:** Tuesdays and Thursdays  
12:25 – 1:25 PM  
231 Fisher Hall.

**Course Summary:** This 2-credit introduction to the basics of nanoscale science, technology, and engineering will be a team-taught reading and discussion class. We will survey key issues related to the development of nanoscale science and engineering, emphasizing the interdisciplinary nature of this field. Attention will be focused on three basic elements: the fundamental science, engineering and science applications, and the societal implications of this emerging science and technology. In a seminar format, students and faculty will discuss readings on nanoscience and technology; attend talks and meet outside speakers and campus researchers engaged in nanoscale research; and conduct small projects that introduce the current literature and research in the field. Students will also have the opportunity to visit state-of-the-art laboratories at MTU involved in nanotechnology research

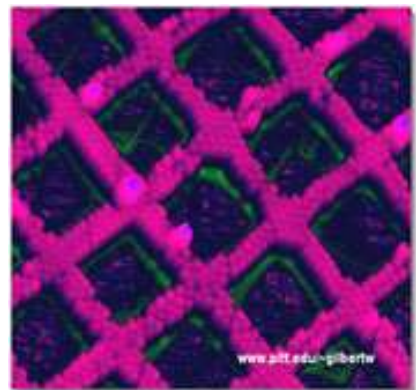
**Primary Reading:** Ratner, Mark, and Daniel Ratner, *Nanotechnology: A Gentle Introduction to the Next Big Idea* (Upper Saddle River, NJ: Prentice Hall, 2003).



New Focused Ion Beam Milling system (Hitachi FB-2000A) in MTU's "Center for Nanomaterials Research".



Short length of a single walled carbon nanotube wrapped with a solubilizing Polymer molecule (polystyrene sulfonate)



Polystyrene nanoparticles deposited into Poly (dimethylsiloxane) grooves