General Information for "Introduction to Nanoscience and Nanotechnology"
(92365 PHYS 85200 – 2) 2005 Fall

Lecturers:

1. Prof. Raymond Tung
   Office: 2156N Ingersoll, Brooklyn College
   Phone: 718-951-5000 x2854 Email: rtung@brooklyn.cuny.edu
2. Prof. Todd Holden
   Office: 2157N Ingersoll, Brooklyn College
   Phone: 718-951-5000 x2855 Email: tholden@brooklyn.cuny.edu
3. Prof. Zhonghui Chen
   Office: 2156F Ingersoll, Brooklyn College
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Course Plan:

#1-3 include (by Prof. Zhonghui Chen)

- Introduction
  - Important concepts in nanoscience and nanotechnology
  - Technology that enables science
  - Current themes in nanoscale science and technology
  - Commercial applications of nanotechnology
  - The social dimensions of nanotechnology
- CMOS
- Si processing/fabrication

#4-6 include (by Prof. Raymond Tung)

- Non-traditional nano-fabrication
- Carbon nanotube
- Self-organization and self-assembly
- Quantum dots and wires
- Mesoscopic transport

#7-9 include (by Prof. Todd Holden)

- Optical spectroscopy of nanostructures
- Scanning probe microscopy

#10-14 include (by Profs. Todd Holden and Raymond Tung)

- Seminars presented by students

Schedule: 9:45am – 11:45am Mondays (exception: Oct. 11, Tuesday, for Monday schedule)
(Room 8405 at the CUNY Graduate Center)

Grade:

A 25-min. seminar presentation on a selected topic in the area of nanoscience and nanotechnology (≤15 power point slides, including corresponding narrative notes).
The seminar topic should be chosen by mid of October.

References:

1) Introduction to Nanotechnology, Charles P. Poole, Jr. and Frank J. Owens, Wiley, 2003
2) Silicon VLSI Technology, J.D. Plummer, M.D. Deal, and P.B. Griffin, Prentice Hall, 2000
3) Introduction to Solid State Physics, C. Kittel, a chapter about nanotechnology, Wiley, 2004
4) TBA