



PH359 Jan 3:0

Physics of Nanoscale Systems

Instructor

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Teaching Assistant

Email:

Department: Physics

Course Time:

Lecture venue:

Detailed Course Page:

Announcements

Brief description of the course

The course is meant for final year masters or first year PhD students aspiring to work in the field nanotechnology. The Course is based on principles of fundamental physics, and hence a background in physics is essential.

Prerequisites

Exposure to solid state physics course at the masters level.

Syllabus

Electronic band structure at different dimensions, one dimensional conduction, conductance quantization, I-V characteristics, resonant tunneling, physics of quantum dots, artificial atoms, two dimensional heterostructures, graphene and carbon nanotubes, light-matter interaction at nano scale, nanoplasmonics.

Course outcomes

Electronic and optical properties of low-dimensional materials.

Grading policy

30% assignment, 10% project, 60% final examination

Assignments

Resources