Course Overview

A detailed study of a selected field of active research in physics, including motivation, techniques, and results obtained to present, as well as the difficulties and unsolved problems.

The course will begin with lectures on selected current research problems in high-energy physics, cosmology, materials science and other physics subfields, given by Columbia University research faculty. In subsequent classes students will be divided into two sessions, and those classes will be dedicated to student presentations, Q/A and discussion, and peer assessment exercises.

Goals

• To expose students to current research in physics.
• To develop students’ presentation and scientific discussion skills.

Requirements

• For Physics majors only. Priority given to seniors; juniors by permission of the instructor.
• Attendance is mandatory. Students must notify the instructor in case of excused absence.

Evaluation

Pass/Fail credit only [2 points].

Each student must give a 30-minute talk on a topic chosen in consultation with the instructor. Three general talk categories are possible:

1. Research talk: Presentation of student’s own research.
2. Journal talk: Presentation of a recent scientific paper.
3. Seminar talk: Presentation of a current problem (or recently resolved problem) in physics.

Each student must also provide constructive feedback and assessment for peer presentations.

Peer assessment and feedback will be collected and considered in overall assessment.