

Professional Physics Seminar:

Provides a look at some of the major developments of current interest in physics research and discusses the activities physicists undertake in research, education, industry, government, and other areas of the economy.

- Syllabus (details TBD):

Structure of Physical Science: Basic, Fundamental (on Frontiers of research), Applied/;

Experimental, Theoretical, Computational/;

Subdisciplines (subdivision) in Physics:
.....;

Interaction of Physics with other Sciences;

Physics and Society, Government;

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Phys 170 (Fall of 2015):
Professional Physics Seminar
(1 credit)

Format:

Conversations on Suggested topics,
Discussions, Assignments to prepare and
participate in Debates Issues;

Grading Method:

Integral on overall activity and participation in
debates.

Literature and References:

Class and discussion material on suggested
topics.

Suggested Topics:

- Profession of Physicists (Today and in retrospect).
- Impact on other scientific disciplines.
- Physics and Society.
- Physics on the Frontline of Knowledge vs. Applied Physics.
- XX century Revolution in Physics:
- Relativity and Quantum Physics.
- Legacy of XX century revolution in applications:
- In condensed matter, Nuclear, Lasers, GPS etc.
- From Barions and Leptons to Standard Model.
- Tools to study in High Energy Physics: Cosmic Ray Detection and Colliding Beam Experiments (LHC and beyond).
- Gravitation and Evolution of Universe. Big Bang and Inflation.
- Entrance of Dark Matter. Do we need to go beyond Standard Model.
- Dark Energy.
- Frontlines in Applied Physics: Condensed Matter.
- Modern Atomic Physics and Quantum computing
- Nano-science and Metamaterials.

Suggested topics (cont.)

- Physics and Global Problems of XXI century.
- Understanding the Global Climate Change.
- Physics for the Energy Crisis.
- Nuclear Energy and Weapons. Manhattan Project
- as an Example of Large Scale Organized Efforts.
- Arms Race and International Treaties.
- Role of Physics in Space Program. Global implications and Treaties.
- Physics for Medicine.

Books

Optional

