

Physics 201

Modern Topics in Physics and Astronomy

Fall Term 2017

Type — Seminar (1 credit hour)
Time — Friday 2:30 PM–3:20 PM
Location — JH 110
Instructor — Prof. Ken Bloom, JH 258E, 402-472-6093, kenbloom@unl.edu
Assistant — Amber Bridgeford, amber.bridgeford@gmail.com

Overview: This seminar course is designed to introduce students to exciting topics in physics and to acquaint students with the research and faculty members in the UNL Department of Physics and Astronomy, and other opportunities available to physics students.

Course requirements for students:

1. Attendance is required and counts toward the semester grade as shown in the table below.
2. During this course, department faculty will give seminars on their respective research areas or more general scientific topics.
3. Students will write **2 essays of 3-4 pages each**, each of which summarizes one of the presented seminars given in the course, with a focus on the science content, and expands on it. Essays are to be submitted through the Canvas system. Students can choose which presentations to address. We recommend that you contact a presenter of your choice to clarify what was presented and to ensure the accuracy of your reports. All standard rules on citations and plagiarism apply. Each report will be due **no later than 2 weeks after the class session when that seminar is given**. However, the first essay must be turned in by **October 27**, and the second by **December 13**. Beyond a summary of the presentation, questions that *could* be addressed in these essays include:
 - What is the significance of this topic in the field of physics and astronomy?
 - What did you find most interesting about the topic, and why?
 - What are the most significant open physics questions on this topic?
 - What are the most significant technical challenges which researchers in this field face?

Grading: Final grade will be based on the following weighting:

Attendance	20 %
Lecture Essays	80 %

Students with Disabilities:

Students with disabilities are encouraged to contact one of the instructors for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

Schedule: This is a **tentative** schedule; topics and dates may change.

Date	Speaker	Title
August 25	Ken Bloom	Introduction to Physics and Astronomy
September 1	Tim Gay	Chirality in Nature
September 8	Alexei Gruverman	Scanning Probe Microscopy – Seeing at the Nanoscale
September 15	Christian Binek	Voltage-controlled magnetism in magnetic thin film heterostructures
September 22	Rebecca Harbison	Saturn’s Rings, Post-Cassini
September 29	Meagan Savage/Haley French-Sloan	Academics + Experience = Opportunities
October 6	Don Umstadter	Research with light a billion times brighter than at the surface of the sun
October 13	Steve Ducharme	Molecular Ferroelectrics: Getting a Charge out of Organic Electronics
October 20	Peisi Huang	Particle Physics after the discovery of the Higgs Boson
October 27	Xiaoshan Xu	Advanced thin film growth: arranging atoms for functionalities
November 3	Maggie Wittlin	Alternative careers for physics majors: law and science journalism
November 10	Sophia Hayes (WoPhyS)	
November 17	Greg Snow	Experimental High Energy Physics at UNL
November 24	Thanksgiving	No class
December 1	Shireen Adenwalla	
December 8		