Physics 201
Modern Topics in Physics and Astronomy
Fall 2023

Course Objectives

This seminar course is designed to introduce students to exciting topics in physics, and in particular research being performed by UNL Department of Physics and Astronomy faculty members, and other opportunities available to physics students. It also serves as a welcome to the department and the discipline of physics as a whole.

Meeting Time and Location

2:30-3:20 Fridays. The first lecture will be Friday, August 25. The last lecture will be on Friday, December 1.

Instructor

Martin Centurion, 079 Jorgensen, 472-5810, martin.centurion@unl.edu
Office Hours: TBA

Teaching Assistant

Nikhil Kumar Pachisia, npachisia2@huskers.unl.edu.

Class Sessions

Most sessions will feature a presentation by a department faculty member on their research work. Some may be on more general enrichment topics.

Attendance Policy

Students are required to attend all class sessions. You will have the opportunity to ask questions during and after the presentations.

Assignments

There will be individual weekly assignments. Students will fill out a worksheet after every presentation. The worksheet will contain questions about the presentation. If parts of the presentation were not clear enough to answer all the questions, you may ask the speaker during, or after the talk. These assignments are to be completed individually, getting help or copying answers for anyone else will be considered cheating. You may contact the presenter for clarification, although you may not ask him/her for the answer to one of the questions in the worksheet.

Grading

Your grades will be based on your individual weekly assignment and class attendance. The class is based on presentations, so if you miss a lecture you will

not be able to make it up. Your absence will be excused if it is justified (for example due to sickness or a family emergency). In this case please contact the instructor as soon as possible. A single instance of academic dishonestly may result in a failing grade for the course. Copying the assignment from another student is an example of academic dishonesty. For more examples of what is considered academic dishonesty, see the Student Code of Conduct (http://stuafs.unl.edu/ja/code/three.shtml).

This is how your final grade will be calculated:

Class attendance	50 %
Weekly HW assignment	50 %

The grades will be determined from your final score using the scale below. The scale shows the lower cutoff for a grade. For example, if your score is greater or equal to 80% but less than 84% you will get a B.

Score	**Grade**
98	A+
92	A
88	A-
84	B+
80	B
76	B-
72	C+
68	C
64	C-
60	D+
56	D

CLASS RECORDINGS

I invite all of you to join me in actively creating and contributing to a positive, productive, and respectful classroom culture. Each student contributes to an environment that shapes the learning process. Any work and/or communication that you are privy to as a member of this course should be treated as the intellectual property of the speaker/creator, and is not to be shared outside the context of this course.

Students may not make or distribute screen captures, audio/video recordings of, or livestream, any class-related activity, including lectures and presentations, without express prior written consent from me or an approved accommodation from Services for Students with Disabilities. If you have (or think you may have) a disability such that you need to record or tape class-related activities, you should contact Services for Students with Disabilities. If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Failure to follow this policy on recording

or distributing class-related activities may subject you to discipline under the Student Code of Conduct.

Presentation Schedule (Updated schedule on Canvas)

Date	Speaker	Title
August 25	Martin Centurion	Introduction
September 1	Herman Batelaan	Quantum Entanglement
September 8	Christian Binek	**Emergent Quantum Materials and Technologies**
September 15		
September 22	Peter Dowben	Condensed Matter Physicists as Astronomers: Nebraska's Helio-astronomy Project in Pursuit of the Solar Neutron Flux
September 29	Uiterwaal/Batelaan	Augmented Reality
October 6	Ken Bloom	Discovering the Quantum Universe at the Large Hadron Collider
October 13	CAS Career Coaches	Intro to Career Services, What Can I Do with This Major?, Gaining Expeirence

October 20		
October 27		
November 3	Ilya Kravchenko	Astrophysics research at UNL: neutrinos and cosmic rays
November 10		
November 17	Timothy Gay	Chiral Collisions
December 1		
December 8	No lecture on this day.	Last day of classes

Academic Honesty

Academic honesty is essential to the existence and integrity of an academic institution. The responsibility for maintaining that integrity is shared by all members of the academic community. The University's Student Code of Conduct addresses academic dishonesty. Students who commit acts of academic dishonesty are subject to disciplinary action and are granted due process and the right to appeal any decision.

Students with Disabilities

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can discuss options privately. To establish reasonable accommodations, I may request that you register with Services for Students with Disabilities (SSD). If you are eligible for services and register with their office, make arrangements with me as soon as possible to discuss your accommodations so they can be

implemented in a timely manner. SSD contact information: 232 Canfield Admin. Bldg.; 402-472-3787.

Diversity & Inclusion

The University of Nebraska-Lincoln does not discriminate on the basis of race, ethnicity, color, national origin, sex (including pregnancy), religion, age, disability, sexual orientation, gender identity, genetic information, veteran status, marital status, and/or political affiliation.