

## **Syllabus Physics 451 Spring 2023**

Meets Monday Wednesday Friday @ 12:30-1:20 in Jorgensen Hall 247

Textbook: Introduction to Electrodynamics by David J. Griffiths 3<sup>rd</sup> Edition

Student help hours: Mon 1:30-3:00 and Wed 1:30-3:00

### My coordinates

Office: Jorgensen Hall 310E

Email: [sadenwalla1@unl.edu](mailto:sadenwalla1@unl.edu) (I usually answer emails within 24 hours during the week-weekends take longer)

Phone: 472 2709

Time required to do well: 12-15 hours/week outside of class.

Regular class attendance is expected of all students at the University.

See <http://go.unl.edu/coursepolicies> for information on University-Wide Course Policies and Resources.

Quiz: Every week there will be at least 1 and upto 3 short in-class quizzes. They will consist of two parts. One will cover the previous week and may include homework problems; the second part will be a reading quiz on the lectures of the forthcoming week.

Homework: Homework will be due every week. No late homework sets will be accepted. Homework sets are posted on Canvas. Print them out and please make sure all your answers are worked out on the HW sheets, *or it will not be graded*. If you find yourself spending more than 30 minutes on getting started on a single homework problem, *get help*. Help is available via the help hours (see above). You are responsible for knowing the material on the homework. The exams will assume that the HW problems have been worked on, digested and understood.

Exams: Midterm 1: 6th March (Monday) 12:30-1:20

Midterm 2: 17<sup>th</sup> April (Monday) 12:30-1:20

Final (Cumulative): May 17th (Wednesday) 3:30 pm -5:30 pm

<u>Grading:</u>	Homework	150 points
	Quizzes	150 points
	1 <sup>st</sup> midterm	200 points
	2 <sup>nd</sup> midterm	200 points
	<u>Final (cumulative)</u>	<u>300 points</u>
	TOTAL	1000 points

Math Prerequisites: Math 220 or 221. The prerequisite for that is Math 208-Analytical geometry and calculus III. Why is this important? Because we will use all that you learnt in Math 208-read chapter 1 yourself and come to class prepared to use it!

Students with disabilities are encouraged to contact the instructor 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.

## **II. ACADEMIC MISCONDUCT: A SINGLE INSTANCE OF ACADEMIC DISHONESTY WILL RESULT IN A FAILING GRADE FOR THE COURSE.**

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.

Academic dishonesty, as defined below, **includes copying homework either from another student or from existing solutions, whether published or not. Students are allowed to discuss homework with each other, but copying homework (either from an external source or from fellow students) *is* cheating. Using online resources such as Chegg, or copying solutions that are posted online *is* cheating.**

### **STUDENT CODE OF CONDUCT (<http://stuafs.unl.edu/ja/code/three.shtml>)**

#### **4.2 Academic Dishonesty**

a. The maintenance of academic honesty and integrity is a vital concern of the University community. Any student found guilty of academic dishonesty shall be subject to both academic and disciplinary sanctions. Academic dishonesty includes, but is not limited to, the following:

1. **Cheating**: Copying or attempting to copy from an academic test or examination of another student; using or attempting to use unauthorized materials, information, notes, study aids or other devices for an academic test, examination or exercise; engaging or attempting to engage the assistance of another individual in misrepresenting the academic performance of a student; or communicating information in an unauthorized manner to another person for an academic test, examination or exercise.
2. **Fabrication or Falsification**: Falsifying or fabricating any information or citation in any academic exercise, work, speech, test or examination. Falsification is the alteration of information, while fabrication is the invention or counterfeiting of information.
3. **Plagiarism**: Presenting the work of another as one's own (i.e., without proper acknowledgment of the source) and submitting examinations, theses, reports, speeches, drawings, laboratory notes or other academic work in whole or in part as one's own when such work has been prepared by another person or copied from another person.
4. **Abuse of Academic Materials**: Destroying, defacing, stealing, or making inaccessible library or other academic resource material.
5. **Complicity in Academic Dishonesty**: Helping or attempting to help another student to commit an act of academic dishonesty.
6. **Falsifying Grade Reports**: Changing or destroying grades, scores or markings on an examination or in an instructor's records.
7. **Misrepresentation to Avoid Academic Work**: Misrepresentation by fabricating an otherwise justifiable excuse such as illness, injury, accident, etc., in order to avoid or delay timely submission of academic work or to avoid or delay the taking of a test or examination.
8. **Other**: Academic units and members of the faculty may prescribe and give students prior notice of additional standards of conduct for academic honesty in a particular

course, and violation of any such standard of conduct shall constitute misconduct under this Code of Conduct and the University Disciplinary Procedures.

### PHYSICS 451 SPRING 2023 TENTATIVE LECTURE SCHEDULE

DATES	SECTION	TOPICS
01/23-01/27	Chapter 1	<b>Vector Calculus</b>
01/30-02/3	2.1 and 2.2	<b>E</b> field, Coulomb's Law and Gauss' Law
02/6-02/10	2.3-2.5	Potential, Poisson's Equation and Laplace's equation, Boundary Conditions, work and energy, conductors in <b>E</b> fields
02/13-02/17	3.1 and 3.3	Laplace's Equation, separation of variables
02/20-02/24	3.2	Method of images
02/27-03/3	3.4	Multiple expansion
<b>03/6</b>	<b>1st MIDTERM</b>	<b>CHAPTERS 2 and 3</b>
03/08-03/10	4.1 and 4.2	Electric displacement <b>D</b>
<b>03/13-03/17</b>	<b>NO CLASSES</b>	<b>SPRING BREAK</b>
04/03-04/07	4.2, 4.3	Electric Displacement <b>D</b>
04/10-04/14	4.4 and 5.1	Linear Dielectrics. The Lorentz Force Law.
<b>04/17</b>	<b>2nd MIDTERM</b>	<b>CHAPTER 4</b>
04/19-04/21	5.2 and 5.3	Biot-Savart Law, Divergence and Curl of <b>B</b>
04/24-04/28	5.4	Magnetic vector potential, Boundary Conditions, Multipole expansion
05/01-05/05	6.1, 6.2,	Magnetization, field of a magnetized object
05/8-05/12	6. 3, 6.4	H vs B, Linear media
<b>IF THERE IS TIME</b>	<b>7.2 and 7.3</b>	<b>Electromagnetic induction and Maxwell's equations in vacuum</b>
<b>05/17</b>	<b>FINAL EXAM 3:30-5:30</b>	<b>CUMULATIVE</b>