

Fall 2021

PHYS 621-101: Classical Electrodynamics

Slawomir Piatek

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Course Outline
Phys 621-001, Classical Electromagnetism I
Fall 2021

Slawomir Piatek
423F Tiernan Hall
973-596-3551 (office)
piatek@njit.edu

Lecture: Thursday, 6:00 PM – 8:50 PM (in person)

Location: TIER 108

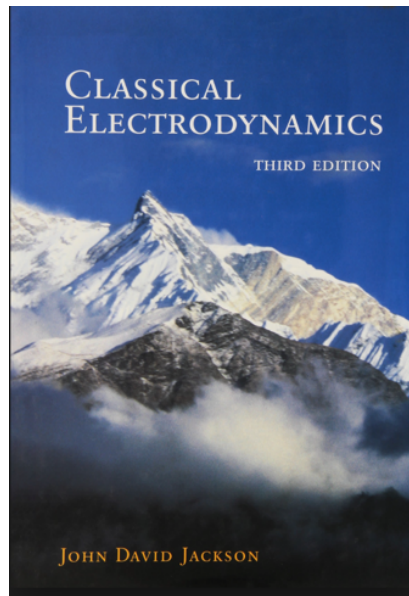
When away, a lecture will be given online via WebEx at:

<https://njit.webex.com/meet/piateknjit.edu>

Office Hour: M & R, 8:30 AM – 9:30 AM via WebEx

<https://njit.webex.com/meet/piateknjit.edu>

Textbook: Jackson, J. D., *“Classical Electrodynamics”*, 3rd edition, J. Wiley



Lecture Quizzes: Starting on September 9, a lecture quiz will be given by the end of every Thursday class. The quiz will contain 3 open-ended problems worth 5 points each for a total score of 15. The quiz will be administered within Canvas, including quiz submissions. The quizzes are open textbook but closed notes.

Midterm: There will be a midterm on Monday, October 21, covering chapters 1 – 3. The exam will contain six open-ended problems, each worth 10 points for the total score of 60.

The exam will be administered within Canvas, including the submission. The format is open textbook but closed notes.

Final Exam: A final exam will be given during the final exam period (TBA), covering chapters 4 – 6. The exam will contain six open-ended problems, each worth 10 points for the total score of 60. The exam will be administered within Canvas, including the submission. The format is open textbook but closed notes.

Homework: No formal homework will be assigned; however, the syllabus lists suggested practice problems that a student should attempt to solve. Problems for the lecture quizzes, midterm, and final may be (but do not have to be) selected from the suggested problems.

Grading:

Lecture quizzes 40%

Midterm 30%

Final 30%

Cutoffs for letter grades:

85% – A

80% – B+

70% – B

65% – C+

50% – C

40% – D

Below 40% – F

Students with disabilities:

If you need accommodations due to a disability, please contact Chantonette Lyles, Associate Director of Disability Support Services, Fenster Hall Room 260 to discuss your specific needs. A Letter of Accommodation Eligibility from the Disability Support Services office authorizing your accommodations will be required.

Honor Code and Etiquette:

NJIT has a zero-tolerance policy for cheating of any kind and for student behavior that disrupts learning by others. Violations will be reported to the Dean of Students. The penalties range from a minimum of failure in the course plus disciplinary probation up to expulsion from NJIT. Avoid situations where your own behavior could be misinterpreted as dishonorable. **Students are required to agree to the NJIT Honor Code on each exam, assignment, quiz, etc. for the course.**

Please do not eat, drink, or create noise in class that interferes with the work of other students or instructors. Creating noise or otherwise interfering with the work of the class will not be tolerated

Class Calendar

TOPIC	TEXT STUDIES	RECOMMENDED PRACTICE PROBLEMS
Week 1 (9/2/21) Introduction to electrostatics	Ch. 1.1 – 1.5	Jackson, 1.1, 1.3, 1.4, 1.5
Week 2 (9/9/21) Introduction to electrostatics	Ch. 1.6 – 1.11	Jackson, 1.6, 1.8, 1.9
Week 3 (9/16/21) Boundary-Value Problems, I	Ch. 2.1 – 2.7	Jackson, 2.1, 2.2, 2.4, 2.5
Week 4 (9/23/21) Boundary-Value Problems, I	Ch. 2.8 – 2.11	Jackson, 2.9, 2.10, 2.11, 2.13
Week 5 (9/30/21) Boundary-Value Problems, II	Ch. 3.1 – 3.3, 5-6	Jackson, 3.1, 3.2, 3.3
Week 6 (10/7/21) Boundary-Value Problems, II	Ch. 3.7 – 3.10	Jackson, 3.6, 3.9, 3.10
Week 7 (10/14/21) Boundary-Value Problems, II (cont'd) Multipoles, Electrostatics of Macroscopic Media, Dielectrics	Ch. 3.7 – 3.10; 4.1 – 4.4	Jackson, 4.1, 4.7, 4.8
Week 8 (10/21/21) Multipoles, Electrostatics of Macroscopic Media, Dielectrics, cont'd Midterm (Chs 1 – 3)	Ch. 4.1 – 4.4	
Week 9 (10/28/21) Multipoles, Electrostatics of Macroscopic Media, Dielectrics	Ch. 4.4, 4.7	Jackson, 4.9, 4.10
Week 10 (11/4/21) Magnetostatics	Ch. 5.1 – 5.3	Jackson, 5.3, 5.6, 5.11
Week 11 (11/11/21) Magnetostatics	Ch. 5.4 – 5.7	Jackson, 5.13, 5.16, 5.17
Week 12 (11/18/21) Magnetostatics	Ch. 5.8 – 5.12, 5.15 – 5.17	Jackson, 5.19, 5.20, 5.22
Week 13 (12/2/21) Maxwell Equations	Ch. 6.1 – 6.5	Jackson, 6.1, 6.4, 6.8
Week 14 (12/9/21) Maxwell Equations	Ch. 6.6 – 6/10	Jackson, 6.9, 6.11, 6.14