

PHYS 3P35 - Electromagnetism I

Instructor:

Prof. D. Crandles
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Brock Calendar Entry

Electric Field, divergence and curl of electrostatic field; relation between electric work and energy; conductors; applications of Laplace's and Poisson's equation in electrostatics; electrostatic fields in matter; field in polarized object and linear dielectrics.

Prerequisites: MATH 2P03 - Multivariable Calculus, MATH 2P08 - Ordinary Differential Equations, MATH 3P06 - Vector Calculus and Differential Geometry

Meeting Times: Tuesday, Thursday 11:30-13:00 MCA 241

Textbook: David J. Griffiths, *Introduction to Electrodynamics*, 4th Ed., Pearson, 2013

Required Software: Download the IClicker app onto your computer or smartphone. The app (less than \$20 USD) is available at:

<https://www.iclicker.com/students/>

Topics

1. Vector Calculus Review - Griffiths ch. 1
2. Electrostatics - Griffiths ch. 2
3. Laplace's Equation: Special Techniques - Griffiths ch. 3
4. Electric Fields in Matter - Griffiths ch. 4

Course Policies

- All students are required to know and abide by the Academic Integrity Policy of Brock University. The University takes Academic Misconduct extremely seriously and will follow its strict procedures to the letter in all cases.

<https://brocku.ca/academic-integrity/>

- Late questions will NOT be accepted.
- Students must achieve 50% on the final exam to pass the course
- Note that the last day to withdraw without academic penalty is Nov. 2, 2021.

Marking Scheme

iclicker Quizzes Daily	10%	Every class (starting class #2) Create an iclicker account and then enroll in PHYS3P35_FW2021_D2 Download iclicker app onto your smartphone or laptop. Each class will have a set of two or three videos (10-12 minute each) as well as assigned readings and problems. It is expected that you watch the videos before class. It is strongly suggested to do the readings and problems before class, and, if not then, certainly after class. Daily Quizzes will be based on the videos/ readings. Understand the definitions and physical meaning of important equations.
Daily Questions	10%	Pose at least one question about the daily videos/readings/problems for every class. Email the questions to dcrandles@brocku.ca by 8pm TWO days before class. Tuesday class, questions due sunday 8pm Thursday class, questions due tuesday 8pm For class #1 - tues sep 14, this means by sunday sep 12
Assignments	60%	approximately 10 assignments, one per week One due every monday starting Sep. 20
Final Exam	20 %	Multiple Choice Questions and/or Problems