

PHYS 3P36 - Electromagnetism II

Instructor:

Prof. D. Crandles
dcrandles@brocku.ca

Brock Calendar Entry

Magnetostatics, divergence and curl of magnetic field; magnetic vector potential; magnetic field in matter; magnetization; field of magnetic object; magnetic field inside of linear and non-linear media; electrodynamics; Ohm's law; Faraday's law and Maxwell equations; energy and momentum in electrodynamics; electromagnetic waves.

Prerequisites: PHYS 3P35

Meeting Times: Monday 19-20:30; Wednesday 8:30-10:00 in Lifesize

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. Magnetostatics - Griffiths ch. 5
2. Magnetic Fields in Matter - Griffiths ch. 6
3. Electrodynamics - Griffiths ch. 7
4. Conservation Laws - Griffiths ch. 8
5. Electromagnetic Waves - Griffiths ch. 9.1,9.2

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 homework/questions will NOT be accepted.
- Note that the last day to withdraw without academic penalty is March 3, 2021

Marking Scheme

| | | |
|------------------------------|------|--|
| iclicker Quizzes In-Class | 10% | Every class (starting class #2) Create an iclicker account and then enroll in PHYS3P36.FW2021.D3 Download iclicker app onto your smartphone or laptop. Quizzes based on assigned video lectures and /or readings for each class 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. 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 9pm the day before class |
| Assignments | 60% | 11 assignments One due every sunday starting Jan. 17 |
| Final Exam | 20 % | Oral Exam based on iclicker quizzes and assignments |