



ELEC 216 – Electricity and Magnetism

Term – Fall 2017 (201709)

CourseSpaces – <http://coursespaces.uvic.ca/course/view.php?id=34515>

Instructor

Dr. Poman So
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Office Hours

Days: Tuesday and Wednesday
Time: 14:30 – 15:30
Location: EOW 417

Course Objectives

Study the fundamentals of electromagnetics with emphasis on engineering applications.

Learning Outcomes

- Describe the basic properties of electric and magnetic forces.
- Solve the gradient of a scalar function and the divergence and curl of a vector function in any of the three primary coordinate systems.
- Apply Coulomb's Law, Biot-Savart Law, Gauss' Law, Faraday's Law, Lenz's Law, Lorentz Force, Ampère's Law, and Maxwell's Equations to solve electromagnetic problems.
- Solve the resistance, capacitance, and inductance of electromagnetic structures.
- Apply the phasor-domain technique to analyze steady-state electromagnetic problems.
- Evaluate the magnetic force and torque on a current-carrying structure due to a magnetic field.

Syllabus

Electric charge, Coulomb's Law, electrostatic forces, electric field, Gauss's Law, electric potential, stored energy. Electric current, conduction in a vacuum and in material media, displacement current, magnetic field of a current, force on a current carrying wire, magnetic induction, electromotive force, energy stored in a magnetic field. Time varying fields. Capacitance, resistance, inductance, and their characterization.

Lectures

A-Section: A01 / CRN 11213
Days: TWF
Time: 13:30 – 14:20
Location: ELL 168

Labs

B-Sections: B01 — B10
See the class schedule listing at the end of this course outline for details
Location: ELL 129

Tutorials

T-Sections: T01, Monday, 14:30 – 15:20, FRA 125

Required Text

Title: Fundamentals of Applied Electromagnetics, 7ed, ISBN-10: 0-13-335681-7
Author: Fawwaz T. Ulaby and Umberto Ravaioli
Publisher: Pearson / Prentice Hall
Year: 2015

Assessment

Assignments:	10%	Due Dates:	See CourseSpaces for details
Labs	20%		
Mid-term	10%	Date:	Tuesday October 17, 2017.
Final Exam	60%		

Note:

1. Failure to complete all laboratory requirements will result in a grade of N being awarded for the course.
2. Failure to pass the final exam will result in a failing grade for the course.
3. Plagiarism detection software may be used to aid the instructor and/or TAs in the review and grading of some or all of the work you submit (<http://www.uvic.ca/library/research/citation/plagiarism/index.php>).

The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Undergraduate Calendar.

There will be no supplemental examination for this course.

Note to students: Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the Chair of the Department by email or the Chair's Secretary to set up an appointment.

Accommodation of Religious Observance: <http://web.uvic.ca/calendar2017-09/general/policies.html>

Policy on Inclusivity and Diversity: <http://web.uvic.ca/calendar2017-09/general/policies.html>

Standards of Professional Behaviour: You are advised to read the Faculty of Engineering document Standards for Professional Behaviour, which contains important information regarding conduct in courses, labs, and in the general use of facilities. <https://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf>

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the entry in the current Undergraduate Calendar for the UVic policy on academic integrity. <http://web.uvic.ca/calendar2017-09/undergrad/info/regulations/academic-integrity.html>

Equality: This course aims to provide equal opportunities and access for all students to enjoy the benefits and privileges of the class and its curriculum and to meet the syllabus requirements. Reasonable and appropriate accommodation will be made available to students with documented disabilities (physical, mental, learning) in order to give them the opportunity to successfully meet the essential requirements of the course. The accommodation will not alter academic standards or learning outcomes, although the student may be allowed to demonstrate knowledge and skills in a different way. It is not necessary for you to reveal your disability and/or confidential medical information to the course instructor. If you believe that you may require accommodation, the course instructor can provide you with information about confidential resources on campus that can assist you in arranging for appropriate accommodation. Alternatively, you may want to contact the Resource Centre for Students with a Disability located in the Campus Services Building.

The University of Victoria is committed to promoting, providing, and protecting a positive, and supportive and safe learning and working environment for all its members.

Course Lecture Notes: Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.

Class Schedule Listing

First Term: Sep - Dec 2017
Aug 15, 2017

Sections Found

[Electricity and Magnetism - 11213 - ELEC 216 - A01](#)

Associated Term: First Term: Sep - Dec 2017

Registration Dates: Jun 19, 2017 to Sep 22, 2017

Levels: Law, Undergraduate

Main Campus

Lecture Schedule Type

Face to Face Instructional Method

1.500 Credits

[View Catalog Entry](#)

Scheduled Meeting Times

Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Every Week	1:30 pm - 2:20 pm	TWF	Elliott Building 168	Sep 06, 2017 - Dec 01, 2017	Lecture	Poman Pok Man So (P)

[Electricity and Magnetism - 11214 - ELEC 216 - B01](#)

Associated Term: First Term: Sep - Dec 2017

Registration Dates: Jun 19, 2017 to Sep 22, 2017

Levels: Law, Undergraduate

Main Campus

Lab Schedule Type

Face to Face Instructional Method

0.000 Credits

[View Catalog Entry](#)

Scheduled Meeting Times

Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Every Week	3:30 pm - 6:20 pm	M	Elliott Building 129	Sep 11, 2017 - Dec 01, 2017	Lab	Poman Pok Man So (P)

[Electricity and Magnetism - 11215 - ELEC 216 - B02](#)

Associated Term: First Term: Sep - Dec 2017

Registration Dates: Jun 19, 2017 to Sep 22, 2017

Levels: Law, Undergraduate

Main Campus

Lab Schedule Type

Face to Face Instructional Method

0.000 Credits

[View Catalog Entry](#)

Scheduled Meeting Times

Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Every Week	2:30 pm - 5:20 pm	T	Elliott Building 129	Sep 11, 2017 - Dec 01, 2017	Lab	Poman Pok Man So (P)

Electricity and Magnetism - 11216 - ELEC 216 - B03

Associated Term: First Term: Sep - Dec 2017
Registration Dates: Jun 19, 2017 to Sep 22, 2017
Levels: Law, Undergraduate

Main Campus
Lab Schedule Type
Face to Face Instructional Method
0.000 Credits
[View Catalog Entry](#)

Scheduled Meeting Times

Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Every Week	2:30 pm - 5:20 pm	W	Elliott Building 129	Sep 11, 2017 - Dec 01, 2017	Lab	Poman Pok Man So (P)

Electricity and Magnetism - 11217 - ELEC 216 - B04

Associated Term: First Term: Sep - Dec 2017
Registration Dates: Jun 19, 2017 to Sep 22, 2017
Levels: Law, Undergraduate

Main Campus
Lab Schedule Type
Face to Face Instructional Method
0.000 Credits
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Scheduled Meeting Times

Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Every Week	11:30 am - 2:20 pm	Th	Elliott Building 129	Sep 11, 2017 - Dec 01, 2017	Lab	Poman Pok Man So (P)

Electricity and Magnetism - 11218 - ELEC 216 - B05

Associated Term: First Term: Sep - Dec 2017
Registration Dates: Jun 19, 2017 to Sep 22, 2017
Levels: Law, Undergraduate

Main Campus
Lab Schedule Type
Face to Face Instructional Method
0.000 Credits
[View Catalog Entry](#)

Scheduled Meeting Times

Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Every Week	2:30 pm - 5:20 pm	F	Elliott Building	Sep 11, 2017 - Dec 01, 2017	Lab	Poman Pok Man

Week pm 129 2017 So (P)

[Electricity and Magnetism - 11219 - ELEC 216 - B06](#)

Associated Term: First Term: Sep - Dec 2017

Registration Dates: Jun 19, 2017 to Sep 22, 2017

Levels: Law, Undergraduate

Main Campus

Lab Schedule Type

Face to Face Instructional Method

0.000 Credits

[View Catalog Entry](#)

Scheduled Meeting Times

Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Every Week	5:30 pm - 8:20 pm	T	Elliott Building 129	Sep 11, 2017 - Dec 01, 2017	Lab	Poman Pok Man So (P)

[Electricity and Magnetism - 11220 - ELEC 216 - B07](#)

Associated Term: First Term: Sep - Dec 2017

Registration Dates: Jun 19, 2017 to Sep 22, 2017

Levels: Law, Undergraduate

Main Campus

Lab Schedule Type

Face to Face Instructional Method

0.000 Credits

[View Catalog Entry](#)

Scheduled Meeting Times

Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Every Week	4:30 pm - 7:20 pm	Th	Elliott Building 129	Sep 11, 2017 - Dec 01, 2017	Lab	Poman Pok Man So (P)

[Electricity and Magnetism - 11221 - ELEC 216 - B08](#)

Associated Term: First Term: Sep - Dec 2017

Registration Dates: Jun 19, 2017 to Sep 22, 2017

Levels: Law, Undergraduate

Main Campus

Lab Schedule Type

Face to Face Instructional Method

0.000 Credits

[View Catalog Entry](#)

Scheduled Meeting Times

Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Every Week	11:30 am - 2:20 pm	M	Elliott Building 129	Sep 11, 2017 - Dec 01, 2017	Lab	Poman Pok Man So (P)

[Electricity and Magnetism - 11222 - ELEC 216 - B09](#)

Associated Term: First Term: Sep - Dec 2017
Registration Dates: Jun 19, 2017 to Sep 22, 2017
Levels: Law, Undergraduate

Main Campus
Lab Schedule Type
Face to Face Instructional Method
0.000 Credits
[View Catalog Entry](#)

Scheduled Meeting Times

Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Every Week	5:30 pm - 8:20 pm	W	Elliott Building 129	Sep 11, 2017 - Dec 01, 2017	Lab	Poman Pok Man So (P)

[Electricity and Magnetism - 11223 - ELEC 216 - B10](#)

Associated Term: First Term: Sep - Dec 2017
Registration Dates: Jun 19, 2017 to Sep 22, 2017
Levels: Law, Undergraduate

Main Campus
Lab Schedule Type
Face to Face Instructional Method
0.000 Credits
[View Catalog Entry](#)

Scheduled Meeting Times

Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Every Week	6:30 pm - 9:20 pm	M	Elliott Building 129	Sep 11, 2017 - Dec 01, 2017	Lab	Poman Pok Man So (P)

[Electricity and Magnetism - 11224 - ELEC 216 - T01](#)

Associated Term: First Term: Sep - Dec 2017
Registration Dates: Jun 19, 2017 to Sep 22, 2017
Levels: Law, Undergraduate

Main Campus
Tutorial Schedule Type
Face to Face Instructional Method
0.000 Credits
[View Catalog Entry](#)

Scheduled Meeting Times

Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Every Week	2:30 pm - 3:20 pm	M	Fraser Building 159	Sep 06, 2017 - Dec 01, 2017	Tutorial	Poman Pok Man So (P)