UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF PHYSICS AND ASTRONOMY
COURSE OUTLINE

1. **Course:** Physics 255, Electromagnetic Theory I

Lecture Sections:

L01: TuTh, 11:00-12:15, ST 132 Christoph Simon, SB 313 403 220 7007, csimo@ucalgary.ca,
Office Hours: M 4:00-5:00

https://d2l.ucalgary.ca/d2l/home/83053
Departmental Office: SB 605, 403-220-5385, phasugrd@ucalgary.ca

2. **Prerequisites:** Physics 211 or 221 or 227; Applied Mathematics 217 or Mathematics 249 or 251 or 265 or 275. See http://www.ucalgary.ca/pubs/calendar/current/physics.html#6030

3. **Grading:** The University policy on grading and related matters is described in sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Assignments (approximately bi-weekly)	20%
Labs	10%
Midterm tests (2, in class)	30% (Feb 12 and Mar 12, 15% each)
Final Examination	40% (To be scheduled by the Registrar)

Percentage to letter grade conversion scale:

> = 93 %	A +	> = 75 %	B +	> = 60 %	C +	> = 45 %	D +
> = 86 %	A	> = 70 %	B	> = 55 %	C	> = 40 %	D
> = 80 %	A -	> = 65 %	B -	> = 50 %	C -	< 40 %	F

Assignments are due on the given due date. Late assignments will be considered only in well-documented emergencies (e.g. a doctor's note should be provided in case of illness).

4. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in Section 3.6. It is the student's responsibility to familiarize himself/herself with these regulations. See also Section E.6 of the University Calendar

5. **Course Materials:** *"Matter and Interactions", 3rd Edition, Volume II, by Chabay and Sherwood, Wiley*

Online Course Components: WebAssign will be used for assignments (free access). Top Hat will be used for teaching purposes only.

6. **Examination Policy**: Exams will be closed book. Calculators are allowed, but no networked devices. Students should also read the Calendar, Section G, on Examinations.

7. OTHER IMPORTANT INFORMATION FOR STUDENTS:

(a) Misconduct: Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under Section K. Student Misconduct to inform yourself of definitions, processes and penalties.

(b) Assembly Points: In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on assembly points.

(c) Academic Accommodation Policy: Students with documentable disabilities are referred to the following links: Students with Disabilities: http://www.ucalgary.ca/pubs/calendar/current/b-1.html B.1 and Student Accessibility Services: http://www.ucalgary.ca/access/.

(d) Safewalk: Campus Security will escort individuals day or night (http://www.ucalgary.ca/security/safewalk/). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

(e) Freedom of Information and Privacy: This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also http://www.ucalgary.ca/secretariat/privacy.

(f) Student Union Information: VP Academic Phone: 220-3911 Email: suvpaca@ucagary.ca.
SU Faculty Rep. Phone: 220-3913 Email: sciencerep@su.ucalgary.ca; Student Ombudsman

(g) Internet and Electronic Device Information: You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

(h) U.S.R.I.: At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference - please participate in USRI Surveys.

Information on lecture and lab outline required as attachment.

The following signature lines should be added to the course outline as appropriate

Department Approval_____Date_____

Where applicable – one of the following.

Associate Dean's Approval for
out of regular class-time activity: _____Date:_____

Associate Dean's Approval for
Alternate final examination arrangements: _____Date:_____

Associate Dean's Approval for
out of regular class-time activity and
alternate final examination arrangements: _____Date:_____

Physics 255 Syllabus

Electric Field. Point Charges. Superposition of electric fields. Electric Dipoles.

Electric Fields and Matter. Insulators and Conductors.

Electric Potential.

Magnetic Field. Biot-Savart Law.

Electric Field and Circuits.

Magnetic Force. Force on moving charge and current-carrying wire.

Patterns of Field in Space. Gauss's Law.

Faraday's Law.

Labs for Physics 255

See also http://pjl.ucalgary.ca/courses/physics255.html

Week 1 (Jan 12 - 16): No Labs
Week 2 (Jan 19 - 23) Measurement Uncertainties
Week 3 (Jan 26 - 30) Labatorial: Electric Charges and Forces
Week 4 (Feb 2 - 6) Electric Potential Mapping
Week 5 (Feb 9 - 13) Midterm Exam Review
Week 6 (Feb 23 - 27) B Wire
Week 7 (Feb 10 - 14) Magnetic Fields and Forces
Week 8 (Mar 3 - 7) Midterm Exam Review
Week 9 (Mar 16 - 20) Capacitor Measurements
Week 10 (Mar 23 - 27) Charge to Mass Ratio of the Electron
Week 11 (Mar 30 - Arp 2) Labatorial: Gauss' Law
Week 12 (Apr 6 - 10) Faraday Effect
Week 13 (Apr 13 - 15) No Labs