UNIVERSITY OF CALGARY
DEPARTMENT OF PHYSICS and ASTRONOMY
COURSE OUTLINE

1. Course: **Physics 259, Electricity and Magnetism** (for students in Engineering), Winter 2011

Lecture Sections:	**L01:** MWF	09:00 – 09:50	ENE 243	**and**	R	08:30 – 09:20	ENE 243	Winter 2011
	L02: MWF	11:00 – 11:50	ENE 243	**and**	R	11:00 – 11:50	ICT 121	Winter 2011
	L03: MWF	08:00 – 08:50	ENE 243	**and**	R	13:00 – 13:50	ENE 243	Winter 2011
	L04: MWF	13:00 – 13:50	ENE 243	**and**	F	08:00 – 08:50	ST 148	Winter 2011
	L05: MWF	15:00 – 15:50	ENA 103	**and**	M	11:00 – 11:50	ENA 101	Winter 2011
	L06: TR	12:30 – 13:45	ICT 122	**and**	T	15:00 – 15:50	ENE 243	Winter 2011

Instructors: L01:	**Dr. Hobill**	SB 639	220-6965	hobill@phas.ucalgary.ca	Office Hours:	T 14:00 – 15:30 W 10:00 – 11:30
L02:	**Dr. Moazzen-Ahmadi**	SB 525	220-5394	ahmadi@phas.ucalgary.ca	Office Hours:	R 12:00 – 14:00
L03:	**Dr. Wilson**	SB 531	220-6088	wjfwilso@ucalgary.ca	Office Hours:	R 14:00 – 16:00
L04:	**Dr. Stil**	SB 519	220-8015	stil@ras.ucalgary.ca	Office Hours:	R 14:00 – 16:00
L05:	**Dr. Ahrensmeier**	SB 533	220-7270	dahrensm@ucalgary.ca	Office Hours:	TBA
L06:	**Dr. Ahrensmeier**	SB 533	220-7270	dahrensm@ucalgary.ca	Office Hours:	TBA

Main Office: SB 605, 220-5385 **Blackboard Course:** PHYS 259 ALL - (Winter 2011) - Electricity And Magnetism
PHYS 259 Course Website: http://webapps3.ucalgary.ca/~dppvan/phys259/

2. **Prerequisites:** Applied Mathematics 217 and Mathematics 211; **Prerequisites or Corequisites:** Applied Mathematics 219

Note: In Physics 259, the Faculty of Engineering prerequisite policy is applied. You are advised to contact the Engineering Faculty Office, EN C 204, if you have questions about prerequisites/corequisites.

3. 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 (13)	**13%**	**Midterm Exam**	**25%**	**Clickers 2%:**	**Usage: 1%;**
Laboratories (12)	**12%**	**Final Examination**	**48%**		**Answers: 1%**
Bonus: Diagnostic Tests	***1% (maximum bonus)***				

There will be a Final Examination scheduled by the Registrar's Office. Students who fail the Final Examination should not expect to receive a course grade higher than D+. A grade of at least C– in the laboratorial portion of the course is necessary for a passing grade in the course.

Calculation of final grade in Phys 259: Percentage grades will be given for all elements of term work and examinations in Physics 259. A weighted course percentage will be calculated for each student after the final exam is written, using the weights provided above. A table of conversion from final course percentage to final course letter grade is available in the Course Information folder on the Phys 259 Blackboard site.

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: **http://www.ucalgary.ca/pubs/calendar/current/sc-3-6.html**. It is the student's responsibility to familiarize himself/herself with these regulations. See also **http://www.ucalgary.ca/pubs/calendar/current/e-3.html**.

5. Dates and times of class exercises held outside of class hours: **Evening midterm test Thursday, February 17, 1845 – 2015.**

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY. If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. **TEXTBOOK**: *"University Physics"*, 12th Edition, by Young and Freedman, Addison-Wesley.

7. **EXAMINATION POLICY:** On the midterm and the final examination, you are required to use the Schulich School of Engineering approved calculator. Students are encouraged to read the Calendar, Section G, on Examinations: **http://www.ucalgary.ca/pubs/calendar/current/g.html**.

Department Approval_____ **Date**_____

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

8. OTHER IMPORTANT INFORMATION FOR STUDENTS:

(a) 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 K. Student Misconduct (**http://www.ucalgary.ca/pubs/calendar/current/k.html**) 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 at http://www.ucalgary.ca/emergencyplan/assemblypoints.

(c) ACADEMIC ACCOMMODATION POLICY. Students with documentable disabilities are referred to the following links:
Calendar entry on students with disabilities: **http://www.ucalgary.ca/pubs/calendar/current/b-1.html**
Disability Resource Centre: **http://www.ucalgary.ca/drc/**

(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 will be 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
Website: **http://www.su.ucalgary.ca/home/contact.html**.
Student Ombudsman: **http://www.su.ucalgary.ca/services/student-services/student-rights.html**

(i) INTERNET and ELECTRONIC COMMUNICATION DEVICE Information. You can assume that in all classes that you attend, **your cell phone should be turned off**. 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.

WJFW 12-1-11

Physics 259 Course Schedule, Winter 2011

Week	Text Reference	Topics	Assignment and Labatorials
		Electric Forces and Fields	
Jan 10-14		General Introduction to Course - - - - - - - - - - - -	**Labatorial #1:** Mechanics Review
	21.1	Electric Charge	
	21.2	Conductors, Insulators, and Induced Charges	
	21.3	Coulomb's Law	**Assignment #1 *(MyMathTest)*:** Due 11:59 pm Sun., Jan. 16
Jan 17-21	21.4	Electric Field and Electric Forces - - - - - - - - - - -	**Labatorial #2:** Electric Charges & Forces.
	21.5	Electric-Field Calculations	**Assignment #2:** Due 11:59 pm Wed., Jan. 19
	21.6	Electric Field Lines	**Assignment #3:** Due 11:59 pm Sun., Jan. 23
			1st Diagnostic Test: Due 11:59 pm Sun Jan. 23
Jan 24-28	22.1	Charge and Electric Flux - - - - - - - - - - - - - - - -	**Labatorial #3:** Electric fields
	22.2	Calculating Electric Flux	
	22.3	Gauss's Law	
	22.4	Applications of Gauss's Law	
	22.5	Charges on Conductors	**Assignment #4:** Due 11:59 pm Sun., Jan. 30
		Electric Potential Energy and Potential; Capacitors	
Jan 31-Feb 04	23.1	Electric Potential Energy - - - - - - - - - - - - - - - -	**Labatorial #4:** Gauss's Law
	23.2	Electric Potential	
	23.3	Calculating Electric Potential	**Assignment #5:** Due 11:59 pm Sun., Feb. 06
Feb 07-11	23.4	Equipotential Surfaces - - - - - - - - - - - - - - - - -	**Labatorial #5:** Motion of Charges
	23.5	Potential gradient	
	24.1	Capacitors and Capacitance	
	24.2	Capacitors in Series and Parallel	**Assignment #6:** Due 11:59 pm Sun., Feb. 13
Feb 14-18	24.3	Energy Storage in Capacitors and Electric-Field Energy - - -	**Labs: *Open Tutorial for Midterm***
	24.4	Dielectrics	
	24.5	Molecular Model of Induced Charge	
		DC (Direct Current) Electric Circuits	
	25.1	Electric Current	
	25.3	Resistance	**Assignment #7:** Due 11:59 pm Sun., Feb. 20

Thursday, February 17 MIDTERM TEST: 18:45-20:15, covering Chapters 21, 22 and 23.

Monday, February 21 is Alberta Family Day - University closed (but libraries open).
February 20-27 is Reading Week. No lectures. University open except Monday.

Feb 28-Mar 04	25.2	Resistivity -	**Labatorial #6:** Electric Potential
	25.4	Electromotive Force and Circuits	
	25.5	Energy and Power in Electric Circuits	
	26.1	Resistors in Series and Parallel	**Assignment #8:** Due 11:59 pm Sun., Mar. 6

Week	Text Reference	Topics	Assignments and Labatorials
Mar 07-11	26.3	Electrical Measuring Instruments - - - - - - - - - -	**Labatorial #7:** Circuit Elements
	26.4	R-C Circuits	
		Magnetic Forces and Fields	
	27.1	Magnetism	
	27.2	Magnetic Field	
	27.3	Magnetic Field Lines and Magnetic Flux	**Assignment #9:** Due 11:59 pm Sun., Mar. 13
Mar 14-18	27.4	Motion of Charged Particles in a Magnetic Field	**Labatorial #8:** Circuits
	27.5	Applications of Motion of Charged Particles	
	27.6	Magnetic Force on a Current-Carrying Conductor	
	27.7	Force and Torque on a Current Loop	**Assignment #10:** Due 11:59 pm Sun., Mar. 20
Mar 21-25	27.8	DC Motors -	**Labatorial #9:** Magnetic Fields & Forces
	27.9	The Hall Effect	
	28.1	Magnetic Field of a Moving Charge	
	28.2	Magnetic Field of a Current Element (Biot-Savart Law).	**Ass't #11:** Due 11:59 pm Sun., Mar. 27
Mar 28-Apr 01	28.3	Magnetic Field of a Straight Current-carrying Conductor	**Lab #10:** Force & Torque on a Loop
	28.4	Force Between Parallel Conductors	
	28.5	Magnetic Field of a Circular Current Loop	
	28.6	Ampere's Law	
	28.7	Applications of Ampere's Law	**Assignment #12:** Due 11:59 pm Sun., Apr. 3
		Electromagnetic Induction	
Apr 04-07	29.1	Induction Experiments - - - - - - - - - - - - - - - - -	**Labatorial #11:** Force between Currents
	29.2	Faraday's Law	
	29.3	Lenz's Law	
	29.4	Motional Electromotive Force	**Assignment #13:** Due 11:59 pm Sun., Apr. 10
Apr 11-15	29.6	Eddy Currents -	**Labatorial #12:** Electromagnetic Induction
	30.1	Mutual Inductance	
	30.2	Self-inductance and Inductors	**2nd Diagnostic Test:** Opens Thurs Apr. 14
	30.3	Inductors and Magnetic Field Energy	
	30.4	The R-L Circuit	***(Assignment #14: Practice assignment)***
			2nd Diagnostic Test: Due 11:59 pm Fri Apr. 22

The last day of lectures for Winter, 2011, is Friday, April 15.