SAMPLE COURSE OUTLINE

Course Code, Number, and Title:

PHYS 1225: Physics II with Calculus

Course Format:
[Course format may vary by instructor. The typical course format would be:]

Lecture 4.0 h + Seminar 0.0 h + Lab. 2.0 h

Credits: 4.0   **Transfer Credit:** For information, visit bctransferguide.ca

Course Description, Prerequisites, Corequisites:

This is a calculus-based introduction to electricity. The course examines electrostatics, electric field, electric current, circuits, magnetic field, electromagnetic induction, oscillations, alternating current, sound, optics, interference and diffraction, modern physics.

Note: Students taking second year Physics courses are advised to take MATH 2362, 2371, 2471, and 2475.

Prerequisite(s): A minimum "B" grade in PHYS 1101, or a minimum "C" grade in PHYS 1125; and a minimum "C-" grade in one of the following: MATH 1271, 1273 and 1283, or 1275 (MATH courses may be taken concurrently).

Learning Outcomes:

Upon successful completion of this course, students will be able to…
- Demonstrate an understanding of electrostatic fields and calculate electrostatic fields using direct integration
- Demonstrate an understanding of Gauss' law and its application in high-symmetry geometries to predict electrostatic fields
- Demonstrate an understanding of and calculate electrostatic potentials
- Demonstrate an understanding of and analyze steady and transient DC circuits with passive circuit elements
- Explain and predict the motion of charges in simple electromagnetic fields
- Demonstrate an understanding of magnetostatic fields and calculate magnetostatic fields using direct integration
- Demonstrate an understanding of Ampere's law and calculate magnetostatic fields in high-symmetry geometries using it
- Demonstrate an understanding of Faraday's law and calculate induced electric fields using Faraday's law
- Demonstrate an understanding of Faraday's flux rule and apply Faraday's flux rule to predict induced voltages and currents

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- Demonstrate an understanding of and analyze simple RC circuits
- Solve problems using rigorous problem solving techniques including differential and integral calculus, and vectors
- Take proper measurements in the laboratory and properly record observations, and methodology
- Write formal laboratory reports

Instructor(s): TBA
Office: TBA   **Phone: (604) 323-XXXX**
Office Hours: TBA   **Email: TBA**

Textbook and Course Materials:
[Textbook selection may vary by instructor. An example of texts and course materials for this course might be:]

For textbook information, visit https://mycampusstore.langara.bc.ca/buy_courselisting.asp?selTerm=3|8

Note: *This course may use an electronic (online) instructional resource that is located outside of Canada for mandatory graded class work. You may be required to enter personal information, such as your name and email address, to log in to this resource. This means that your personal information could be stored on servers located outside of Canada and may be accessed by U.S. authorities, subject to federal laws. Where possible, you may log in with an email pseudonym as long as you provide the pseudonym to me so I can identify you when reviewing your class work.*

Assessments and Weighting:
Final Exam 40%
Other Assessments 60%
[An example of other assessments might be:]

Assignments & Quizzes 10%
Written Tests 30%
Labs 20%

Grading System:
Specific grading schemes will be detailed in each course section outline.

A+	93-100%	B+	76-79%	C+	64-67%	D	50-54%
A	85-92%	B	72-75%	C	60-63%	F	0-49%
A-	80-84%	B-	68-71%	C-	55-59%		

Topics Covered:
[Topics covered may vary by instructor. An example of topics covered might be:]

- Electric Field: Discrete Charge Distributions and Continuous Charge Distributions
- Gauss's Law
- Electric Potential

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- Electric Current, Resistors, Capacitors, Electrostatic Energy, and DC Circuits
- Magnetic Field, Sources of Magnetic Fields and Magnetic Induction

As a student at Langara, you are responsible for familiarizing yourself and complying with the following policies:

College Policies:

E1003 - Student Code of Conduct
F1004 - Code of Academic Conduct
E2008 - Academic Standing - Academic Probation and Academic Suspension
E2006 - Appeal of Final Grade
F1002 - Concerns about Instruction
E2011 - Withdrawal from Courses

Departmental/Course Policies:

Information unavailable, please consult Department for details.

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