PHYSICS 12 – ONLINE - Course Outline

Read this course outline before starting your course

Course Overview

This course consists of 5 units - 3 are pre-determined units and two are choice units. Each unit is broken into a series of lessons, one to three online quizzes, a learning guide and a project that are submitted through online "drop-boxes", and a unit exam. The Required Modules Exam is written after the third unit. The Choice Topics Exam is written after **both** of the Choice Topics are complete.

Course Evaluation

Exams	50% of final mark
Projects*	25% of final mark
Quizzes	10% of final mark
Learning Guides	15% of final mark

*Projects are scored cumulatively and added in once all units have a complete project

*A minimum of one project per unit is required for course completion – more can be used to improve your grade

Materials Required for the Course

Scientific Calculator
Internet Connection and Computer
Shipping Envelopes
Marking/Comment Sheets

Important ** Important ** Important

1. **Active Student Policy First 30 Days: Students are required to complete the "Registration Course" within the first 30 days after their registration into the course.** The Registration Course includes the following: Kinematics Review Quiz, Projectiles Quiz, Unit 1 Learning Guide, Unit 1 Project, and Math & Kinematics Exam. **Students failing to meet this expectation will be withdrawn immediately from the course at the end of the thirty day period.**
2. Look over the "Suggested Completion Schedule" on the next page carefully and use it to guide your studies or use the Personalizable Course Timeline to plan your work schedule.
3. Email is one of the best ways to communicate with your teacher. If leaving a message by phone, be sure to leave a clear message with your name and phone number.
4. **Report Cards** are sent out every 3 months following the month in which you registered for the course.
5. If you change your address, phone, or email address contact your teacher right away.
6. To book a test call the school and ask for the testing center. Our test supervisor will help you to arrange a time that works for you. If leaving a message on her answering machine, speak clearly and leave your full name and phone number.
7. Tests written prior to assignment submissions are held for marking until the assignments are received.
8. **There are no test rewrites and no assignment resubmissions.** Do not send in blank questions. Seek the help you need before your paper is marked, not after.
9. **Updates, Errors, and Omissions** - Check your course for any updates, errors, or omissions to your course materials before beginning, and frequently throughout the course as you begin a new section. If you find a mistake that has not been identified, help others by reporting it to your teacher.
10. **Lost Assignments** - If an assignment is lost in transit or goes missing, students are required to resubmit the "lost assignments" for marking. It is therefore a good idea to make a copy of your assignment before submitting it.
11. Contact your teacher if you will not be working on your course for a period of time. You are responsible for keeping your teacher informed of your work on your course.
12. **Academic Probation and Withdrawal** - Students must be actively working on their courses on a regular basis as indicated by submission of assignments, test completion, or communication with their teacher. Lack of regular activity results in a student being placed on Academic Probation. Continued lack of activity then results in withdrawal from the course. Contact you teacher if you need more than three weeks to submit your next assignment or write your next test, or if you are getting behind. It is your responsibility to communicate your circumstances to your teacher.
13. **Course Expiry** - You have 12 months from the start of your course before your course expires without extension. Upon expiry, all work not done receives a mark of zero and a final grade is calculated.
14. **If you need to complete a percent of this course to attend your school valedictory ceremony**, **you must have that percent of the course completed and turned in by April 15 at the latest.** Previous experiences have shown that failure to meet this deadline will prevent you from participating in the Valedictory Ceremony.

Physics 12 ONLINE course – Suggested Completion Schedule

DE allows students flexibility in school work; sticking to a schedule ensures timely completion to achieve your goals. **Use the following table to complete your course in 19 weeks (1 semester)**. You may choose to complete the course faster or slower. You have one year until your course expires.

Week	Activities	
Week 1	Unit 1 – Math in Physics to Dropping Monkey	
Week 2	Unit 1 – Projectiles– Type 2 to Projectiles – Type 3, Unit 1 Learning Guide, Project, and Exam	
Week 3	Unit 2 –Forces Review to 2D Force Problems,	
Week 4	Unit 2 – Ramp Problems to Pulley Problems	
Week 5	Unit 2 – Pulley Problems, Unit 2 Learning Guide, Project and Exam	
Week 6	Unit 3 – Work & Energy to Efficiency	
Week 7	Unit 3 – Momentum to Collisions & Explosions	
Week 8	Unit 3 – Impulse to 2D Force Problems	
Week 9	Unit 3 – 2D Impulse Problems, Unit 3 Learning Guide, Project, and Exam	
Week 10	Write Required Modules Test	
Week 11	CHOICE TOPIC 1 OPTION A - EQUILIBRIUM	CHOICE TOPIC 1 OPTION B – CIRCULAR MOTION
Week 11	Translational Equilibrium	Circular Motion and Centripetal Forces
Week 12	Rotational Equilibrium & Torque	Gravity, Planetary Motion and Potential Energy
Week 13	Learning Guide, Project, Exam	Learning Guide, Project, Exam
	CHOICE TOPIC 2 OPTION A – ELECTROSTATICS	CHOICE TOPIC 2 OPTION B - ELECTROMAGNETISM
Week 14	Electrostatics and Coulomb's Law	Electromagnetism and Magnetic Fields
Week 15	Electric Fields	Magnetic Forces and The Velocity Selector
Week 16	Electrical Potential Energy	Inducing a Current and Lenz's Law
Week 17	Voltage and CRT's	Motors, Generators and Back EMF to Transformers
Week 18	Learning Guide, Project, Exam	Learning Guide, Project, Exam
Week 19	Write Choice Topics Exam	

TO COMPLETE THE COURSE, YOU MUST COMPLETE THE REQUIRED MODULES AND TWO CHOICE MODULES

Required Modules	
Unit 1: Math & Kinematics	Vector addition; Vector Subtraction; Vector Applications; Kinematics; Graphs; Projectiles Motion Type 1 & 2; Projectiles Type 3
Unit 2: Two Dimensional Dynamics	Newton's Laws of Motion; Ramps and Pulleys
Unit 3: Energy & Momentum	Impulse and Momentum; Dimensional Momentum; Kinetic (Ek) and Potential (Ep) Energy and the Work/Energy Theorem; Conservation of Energy; Conservation of Momentum; Power and Efficiency.

Choice Unit 1 (Choose either A or B)	
Option A: Equilibrium of Forces and Torques	Torque; Translational Equilibrium; Rotational Equilibrium
Option B: Circular Motion	Centripetal Acceleration (Ac) and Centripetal Force (Fc); Vertical Circles; Orbits, Freefall and Gravitational Fields; Work (W) and Energy (E) in orbits

Choice Unit 2 (Choose either A or B)	
Option A: Electrostatics	Introduction to Charge; Electric Fields; Electric Potential Energy; Voltage; The Cathode Ray Tube (CRT)
Option B: Electromagnetic Forces and Induction	Magnetic fields; Solenoids; Electromagnetic Force (Fb); The Current Balance and Cathode Ray Tube (CRT) 2; The Velocity Selector and Mass Spectrometer; Induced Electromotive Force (EMF); Generators; Back EMF; Transformers

This course is based on the learning outcomes for Physics 12 viewable at:

https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/10-12/science/en_s_12_phy.pdf