

SAULT COLLEGE OP APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON

COURSE OUTLINE

COURSE TITLE: P H Y S I C S

CODE NO.: P H Y - 1 2 0

SEMESTER: T M O

PROGRAM: CIVIL TECHNICIAN/TECHNOLOGY

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PREVIOUS OUTLINE DATED: NEW

APPROVED

C H A I R P E R S O N '

DATT

vjflwslmt, 4F 1*

CALENDAR DESCRIPTION

PHYSICS
Course Name

PHY-120
Course Number

PHILOSOPHY/GOALS This is the second of two one-semester courses in physics that form part of the civil engineering technician/technology program; PHY-105 being the first. The objective of each of these two courses is to introduce the student to a number of **fundamental concepts** which should prove to be useful to the civil technician/technology student.

METHOD OF ASSESSMENT (GRADING METHOD)

See attached sheet titled GRADE REQUIREMENTS

TEXTBOOK(S): Physics for Career Education, Fourth Edition
by Dale Ewen, Ronald J. Nelson & Neill Schurter
Regents/Prentice Hall Publishers, 1993

GRADE REQUIREMENTS

PHY 120

PHYSICS

(Civil Technician/Technology)

Your final grade in PHY120 will be determined on the basis of four tests to be administered during the semester. Each test will examine your knowledge of a number of topics and will be administered within one week of completing those topics. The topics covered in each of the four tests are as follows:

- Test #1 - Topic Number I
- Test #2 - Topic Number II
- Test #3 -- Topic Number III
- Test #4 -- Topic Number IV

The four tests are of **equal weight** (i.e., each of the four tests is worth 25% of your final grade). As a result, **provided you have received a passing grade on each of the unit tests**, your final grade will simply be an average of your four test results. In order to obtain your letter grade the following percentage-letter grade equivalents will be used:

A+	90% - 100%	(Consistently outstanding achievement)
A	76% - 89%	(Outstanding achievement)
B	66% - 75%	(Consistently above average achievement)
C	55% - 65%	(Satisfactory or acceptable achievement)
X or R	0% - 54%	(Incomplete or Repeat)

If your final average is **below 55%**, ***OT*** if you have received a **failing grade in one or more of the unit tests**, whether you receive an X grade (Incomplete) or an R grade (Repeat) is **entirely at the instructor's discretion**. The decision will be based upon your final average (e.g. 32% would result in an R grade while 50% might result in an X grade); your attendance during the semester; your attitude while in the classroom; your perceived level of effort during the semester; etc..

In any case, should you find yourself with an X grade at the end of the semester, in order to upgrade your mark to a passing grade you will be required to write a make-up **examination covering the entire course content**. Should you receive a passing grade on the make-up examination (.55% or higher) your X grade will be upgraded. The best you can do after receiving an X grade as a result of a failing average is a CM. If you were required to write the make-up examination as a result of having failed one test you may substitute the exam result for this test result.

Prior to administering any test you will be notified a **full week in advance**. Should you, **for any reason**, not be able to be in attendance on a day for which a test has been scheduled it is **your responsibility** to notify the instructor **prior** to the test. **If your reasons are acceptable**, a date will be set during which you may write a substitute test for the one you have missed.

COURSE OUTLINE

PHY-120

(Civil Technician/Technology)

Reference Text: Physics for Career Education, 4th edition
by Ewen, Nelson and Schurter

Topic Number	Periods Lecture-Lab	Topic Description	Reference Chapters
I		<u>Dynamics</u> - 'scalars' and 'vectors' - 'distance' and 'displacement' - 'speed' and 'velocity' - acceleration - uniformly accelerated motion - Newton's first law of motion (the law of 'inertia') - Newton's second law of motion (the law of acceleration) - the acceleration of gravity - the force of gravity (weight) - Newton's third law of motion (the law of 'action' & 'reaction')	3, 4
II		<u>Work, Energy and Power</u> - work - power - energy - kinetic energy - potential energy - gravitational potential energy - the law of conservation of energy - the law of conservation of mechanical energy	7
m		<u>Solids, Liquids and Gases</u> - properties of matter - properties of solids - properties of liquids - properties of gases - density - 'mass' density - 'weight' density - specific gravity - pressure - pressure at a depth in a liquid (hydrostatic pressure) - Pascal's principle (hydraulic pressure) - air pressure - standard atmospheric pressure - 'gau ^e ' pressure and 'absolute' pressure - Archimedes' principle (buoyancy)	11, 12

Continued

- atoms - protons
 - neutrons
 - electrons
- electrostatic charges
(the law of attraction & repulsion)
- electrical current - amperes
- conductors and insulators
- potential difference, emf - volts
- electrical resistance - ohms
- Ohm's law
- simple series circuits
- simple parallel circuits
- electrical power - watts
- electrical energy - kilowatt hours

G. Disano, January 1994