

SAULT COLLEGE OF APPLIED ARTS ^ . TECHNOLOGY

SAULT STE, r^ARIE. ONTARIO

COURSE OUTLINE

Course Title: Physics
Code No.: PHY105
Program: Architectural & Civil
Semester: First
Date: AiOTast 1985
Author: G. Disano

New: Revision: x

APPROVED:

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CALENDAR DESCRIPTION

<u>Physics</u>	<u>PHY105</u>
Course Name	Course Number"

PHILOSOPHY/GOALS; The objective of this course is to introduce the student to a number of fundamental concepts of physics which should prove useful to the architectural and civil student. The topics covered include: units of measurement, elastic properties of matter, wave motion, sound, temperature and heat, the gas laws and changes of phase.

METHOD OF ASSESSMENT (GRADING METHOD):

See attached sheet titled GRADE REQUIREMENTS

TEXTBOOK(S): Elements of Physics, 9th edition

COURSE OUTLINE

PHY105

PHYSICS

(Architectural and Civil)

Reference Text: Elements of Physics 9th edition
by A. W, Smith & J. N, Cooper

Topic Number	Periods Lecture-Lab	Topic Description	Reference-Chapters
I		<u>Units of Measurement</u> <ul style="list-style-type: none"> - three systems of units - base quantities and base units - metric prefixes and their abbreviations - derived quantities and derived units - conversion of units of measure - force - the distinction between mass and weight - standard gravitational acceleration - proper use of coherent units 	1
II		<u>Elastic Properties of Matter</u> <ul style="list-style-type: none"> - composition of matter - elasticity - Hooke's Law - Stress and Strain: Young's Modulus -- liimit of Elasticity - stiffness and strength of beams 	13
1X1		<u>Wave Motion</u> <ul style="list-style-type: none"> " waves - transverse waves - longitudinal waves - wavelength, frequency and velocity - the flow of energy in a medium - reflection of waves " refraction of waves - superposition and interference of waves 	15
IV		SoundJfeyes <ul style="list-style-type: none"> - sound ~ the speed of sound ~ frequencies and wavelengths of audible sounds - pitch and loudness - refraction of sound - reflection of sound - architectural acoustics 	16

V	<u>Temperature and Heat</u>	18,19
	- temperature	
	- the Fahrenheit and Celsius temperature scales	
	~ heat as a form of energy	
	- the absolute temperature scales	
	- definition of the kilocalorie	
	- definition of the Btu	
	- the mechanical equivalent of heat	
	- radiant energy conversion to heat	
	- specific heat	
	- expansion of solids	
	- solid expansion temperature measuring devices	
	" liquid expansion temperature measuring devices	
	- thermocouple as a temperature measuring device	
	- the mercury switch	
VI	<u>The Gas Laws</u>	19
	- Boyle's Law	
	- Charles' Law	
	- the General Gas Law	
VII	<u>Changes of Phase</u>	21
	- the three states of matter	
	- the melting point	
	- latent heat of fusion	
	- evaporation and boiling	
	- latent heat of vaporization	
	- sublimation	
	- the triple point	
	- the critical point	
VIII	<u>Heat Transfer</u>	22
	- heat-transfer processes; conduction	
	convection	
	radiation	
	- Newton's Law of Cooling	

GRADE REQUIRMENTS

PHYIOS

PHYSICS

(Architectural and Civil)

Your final grade in PHY116 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 a week of completing those topics. The topics covered in each of the four tests are as follows:

Test #1———Topic Number I
 Topic Number II

Test #2———Topic Number III
 Topic Number IV

Test #3———Topic Number V
 Topic Number VI

Test #4———Topic Number VII
 Topic Number VIII

The four tests are of equal weight (i.e. each of the four tests is worth 25% of your final grade). As a result 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 : 76% - 100%

B : 66% - 75%

C : 55% - 65%

X or R : 0% - 54%

If your final average is below 55% whether you receive an X (Incomplete) or an R (Repeat) grade is entirely up to the instructor's discretion. The decision will be based upon your final average (i.e. 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 to a C grade. The best you can do after receiving an X grade is a C!

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 the test

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