



Physics-7<sup>^</sup>

Phy 205

COURSE KAMB

CODE NO.

TOTAL CREDIT HOURS: 45

PREREQUISITE(S): None

### I. PHILOSOPHY/GOALS

The objectives of this course reflect the prerequisites of the fourth semester course In fluids for technicians. The program requires proficiency in understanding of the gas laws for gases and the laws which apply to incompressible liquids.

### II. STUDENT PERFORMANCE OBJECTIVES

Upon successful completion of this course the student will:

1. Understand the foundation of the fundamental principles of Heat and Fluids with practical application through problems. There is no laboratory component.
2. Learn and apply the units of both the Imperial System and the International System of measurement.

### III. TOPICS TO BE COVERED

1. Concepts of Heat, Temperature and Internal Energy
  - Historical sketch
  - Heat, Temperature and Internal Energy
  - Temperature Metrology
  - The Temperature Scales
  - Relationship between Work and Heat
  - Specific Heat of Solids and Liquids
  - Change of State
  - Evaporation and Condensation
  - Melting and Freezing
  - Regelation and Sublimation
  - Humidity

2. Thermal Properties of Solids and Liquids

- Structure of Matter
- Thermal Expansion in Solids and Liquids
- The Relationship between Thermal Expansion and Load Strain

3. Thermal Properties of Compressible Fluids

- The Gas Laws of Charles and Boyle
- Ideal Gas Law
- The Gas Constant

4. Properties of Incompressible Fluids

- Hydrostatic Pressure
- Measurement of Pressure, Manometry
- Pascal's Law: Hydraulic Jacks
- Buoyancy and Archimedes Principle
- Bernoulli's Theorem and Applications

IV. EVALUATION METHOD(S)

**Final Mark**

Final Marks will be computed in the following way:

Assignments and Quizzes . . . . .	20%
Tests . . . . .	80%

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### Final qg^dg

Final grades will be assigned on the basis of the following table:

A^ »	90% - 100%
	80% - 89%
B =	70% - 79%
C «	55% - 69%
R =	0% - 54%

Students having less than a "C" grade at **term end, MAY** have opportunity to rewrite a test. one **time** only\* If the revised final mark is over a "C" average, a '\*C' grade will be issued\* However, if the revised average remains less than a "C", an "R" grade will result, and the student will be obliged to repeat the course.

In order to qualify for test rewrite opportunity, a student must have submitted 100% of the assignments and have a class attendance record of at least 80% throughout the term.

Note that there will be no allowance for assignment and quiz rewrites.

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Tests will be scheduled throughout the term, at the completion of each of the four sections. A minimum of one week's notice will be provided to allow preparation for the test. There will be class time scheduled for review purposes before each test.

Students who will be absent for a scheduled test must contact the instructor in ADVANCE\* Students absent with a valid reason will be allowed to write a similar test at the instructor's convenience. Students absent without prior notification, or a valid reason will be assigned a ZERO grade for the missed test.

### Aaglqnaftnta

**Assignments will be required to be submitted throughout the term, and subject to random marking\* Assignments may be scheduled for class time, or issued as homework exercises, and are to be submitted PRIOR to the start of the class on the due day.**

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Late and unsubmitted assignments will be considered uncompleted and be given a ZERO grade^ unless PREVIOUS arrangements were made with the instructor.

#### Quizggg

Unscheduled quizzes may be held throughout the term, as class time exercises. A missed quiz will receive a ZERO grade.

#### V. REQUIRED STUDENT RESOURCES

No textbook required.

Notes are provided as needed.

#### yi. SPECIAL NOTES

Students with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accomodations confidentially with the instructor.

Your instructor reserves the right to modify the course as s/he deems necessary to meet the needs of the students.

