

## Course Syllabus

### PHYSICS: THERMODYNAMICS AND OPTICS

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Program: Oceanographic Engineering

#### 1. Course number and name

FISG1009 - PHYSICS: THERMODYNAMICS AND OPTICS

#### 2. Credits and contact hours

3 credits and 5 contact hours

#### 3. Instructor's course or coordinator's name

EDUARDO EFRAIN MONTERO CARPIO

#### 4. Text book, tittle, author, and year

- YOUNG y FREEDMAN. FISICA UNIVERSITARIA VOL.2 (14)

#### 5. Specific course information

- a. Brief description of the content of the course (catalog description)

This subject of basic instruction is a theoretical-practical course that covers the fundamental basis of mechanical and electromagnetic waves, geometrical optics, wave and corpuscular optics, temperature, thermal expansion and ideal gases, heat, and laws of thermodynamics, in an environment of active learning.

- b. Prerequisites

PHYSICS: MECHANICS - FISG1005

- c. This course is: Required

#### 6. Specific goals for the course

- a. Specific outcomes of instruction

- 1.- Use the characteristics of light in reflection, refraction, interference, diffraction and polarization phenomena.
- 2.- Analyze the thermal properties of matter and the laws of thermodynamics for the calculation of energy transfer in thermal processes

- b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course

#### 7. Brief list of topics to be covered

- 1.- Evaluation activities
- 2.- Mechanical and electromagnetic waves
- 3.- Geometrical optics
- 4.- Wave and corpuscular optics
- 5.- Temperature, thermal expansion and ideal gases
- 6.- Heat
- 7.- Laws of thermodynamics