Course Title	Course Code	Number of Study Hours			Year	Level	Prerequisites
		Theoretical	Laboratory	Credit			
Thermodynamics	222PHYS	3	-	3	2nd	4th	221PHYS

(1) Brief Course Description

The course is dealing with the basic properties of steam and gases. The course discusses different processes in thermodynamics and their applications.

(2) Course Objectives

This course is designed to provide students with:

- Concepts of a system, heat, work, Process, a cycle, internal energy, enthalpy and entropy.
- Fundamentals of water vapour, steam tables and perfect gasses.
- Applications of the first law of thermodynamics, general law of ideal gases and the second law of thermodynamics.
- Skills to solve problems regarding the physical principles included.

(3) Course Contents

- Concepts of a system, heat, work and the cycle.
- Calculation of work in different processes and cycle problems.
- First law of thermodynamics.
- Curves of water vapour and use of steam tables.
- The general law of ideal gases, the internal energy and enthalpy of gases.
- Important processes in thermodynamics for both steam and perfect gases and problems.
- The second law of thermodynamics and the concept of entropy.
- Entropy calculations for both steam and perfect gases and cycle problems.
- The heat engine and the Carnot cycle.

(4) Assessment Criteria

- Periodic Exams: 40%
- Oral, Student Activity and Essay: 10%
- Final Exam: 50%

(5) Course Teaching Strategies

- Lectures, Reports and Essay Assignments, Homework, and Web-based Assignments.

(6) Text Book

- Applied thermodynamics for Engineering Technologist; T.D Eastop and A. Mcconky, 5th Edition Amazon. Com. 1996.

(7) Reference Books

- Thermodynamics, an Engineering Approach; Yunus A.Cengel and Michael A. Boles, McGraw-Hill Inc, 2006.
- Thermodynamics, Kinetic theory and Statistical thermodynamics; F.W. Sears and G.L.Sainger, John Wiley and Sons Inc., 1975.