

Aerospace Engineering **Division: Propulsion**
Level and Major: Graduate, Aerospace Eng

Course Title: Thermodynamics (I)
Lecturer: Amirreza Ghahremani

Number of Credits: 3

Prerequisite

Course Description:

Thermodynamics is one of the key branches of science focusing on heat, work, energy storage, energy conversion, and properties of different substances.

Course Goals and Objectives:

Introduction to fundamentals of thermodynamics, work, energy, and entropy

Course Topics:

- Introductory Comments
- Concepts and Definitions
- Properties of a Pure Substance
- Work and Heat
- The First Law of Thermodynamics
- The Second Law of Thermodynamics
- Entropy
- Irreversibility and Availability

The course aims to:

At the end of this course, it is expected that the students would be familiar with the basic subject matter of thermodynamics. So, they can apply their knowledge in different applications of thermodynamics at various professional fields.

Reading Resources:

- C Borgnakke, Richard Edwin Sonntag, Gordon J Van Wylen - Fundamentals of thermodynamics-Wiley(۲۰۰۹)
- Thermodynamics: An Engineering Approach, Cengel

Evaluation:

5. % Final Exam, 40% Midterm, 10% Homework