

MA 531- Advanced Thermodynamics

Course Code:	MA-531
UTAA Credit (Theoretical-Laboratory hours/week):	3(3-0)
ECTS Credit:	6.0
Department:	Mechanical and Aeronautical Engineering
Language of Instruction:	English
Level of Study:	Graduate
Offered Semester:	Fall and Spring Semesters.

Course Objectives

The objective of this course is to teach the principles of classical thermodynamics and to train students to identify, formulate and solve engineering problems in thermodynamics.

Course Content

First law of thermodynamics, second law of thermodynamics, entropy, exergy, reversible and irreversible processes, thermodynamic analysis of processes, power generation, entropy generation minimization.

Course Learning Outcomes

- 1-Explain the physical origins and kinds of stored energy states
- 2-Develop methodologies that facilitate application of the subject to the broad range practical problems including fluid dynamics and heat transfer
- 3-Develop appropriate expressions from first principles
- 4-Ability to improve the effective usage of existing energy resources