

Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
ING213	Thermodynamics	3	2	0	0	3	4

Prerequisites	
Admission Requirements	

Language of Instruction	Turkish
Course Type	Compulsory
Course Level	Bachelor Degree
Objective	<p>The knowledge of physics is one of the essential basis of an engineer's curriculum. In this figure, thermodynamics plays a role in many industrial applications: energy, materials, metallurgy, chemistry, car industry, etc. More generally, its applications cover a large field in everyday life: buildings and constructions, climate etc...</p> <p>In this context, this class' objectives are:</p> <ul style="list-style-type: none"> -consolidate the notions learned in the first two semesters of the curriculum. -study new notions with a rigorous: diffusion, fluid dynamics, phase transitions, open systems, non steady-state systems. -Apply those new notions in order to describe industrial systems: pomps, water pipes, plane reactor, nuclear plant, car engine, speed captor, insulating materials...
Content	diffusion, fluid dynamics, phase transitions, open systems, non steady-state systems
References	<ol style="list-style-type: none"> 1. H. Gié, Thermodynamique, Lavoisier, 1994. 2. H. Callen, Thermodynamics and an introduction to thermostatistics, Wiley, 1985.

Theory Topics

Week	Weekly Contents
1	Recalls of first year's notions
2	Recalls of first year's notions
3	Thermodynamical potentials
4	Open systems
5	Open systems
6	Thermic diffusion
7	Thermic diffusion
8	Particule diffusion
9	Partial exam
10	Phase transition
11	Phase transition
12	Statics of fluids
13	Fluids dynamics
14	Fluids dynamics