

Introduction

M2794.007900 Advanced Thermodynamics

Credits	Department			Representative Instructor			
				Name	Email		
3	Mechanical Engineering Major			Kim, Min Soo	minskim@snu.ac.kr		
1. Goals	<p>This course is aiming at extending fundamental knowledge on the laws of thermodynamics to various applications and at understanding statistical approach to diverse problems. Starting from the classical thermodynamics, basic principles and related topics will be dealt with. Statistical modeling of gas, solid, and liquid phases will be made, and behaviors of materials will be intensively studied.</p>						
2. Texts Book	Materials-Materials-Classical and Statistical Thermodynamics-Ashley H. Carter-Prentice-Hall-2001						
3. Evaluation	Attendance	Task	Midterm	Final	Attitude	Others	Total
	0%	10%	40%	40%	0%	10%	100%

Introduction

4.Lecture Plan	[1 Week]	Introduction
	[2 Week]	Nature of Thermodynamics, Equation of State
	[3 Week]	The First Law of Thermodynamics, Applications
	[4 Week]	The Second Law of Thermodynamics, Applications
	[5 Week]	Chemical Potential, Kinetic Theory of Gases
	[6 Week]	Classical and Quantum Statistics
	[7 Week]	Classical Statistical Treatment of Ideal Gas
	[8 Week]	Mid-term Exam.
	[9 Week]	Heat Capacity of Diatomic Gases
	[10 Week]	Heat Capacity of Solid
	[11 Week]	Bose-Einstein Gases (1)
	[12 Week]	Bose-Einstein Gases (2)
	[13 Week]	Fermi-Dirac Gases (1)
	[14 Week]	Fermi-Dirac Gases (2)
	[15 Week]	Final wrap-up