# Introduction

| M2794.007900 Advanced Thermodynamics | | | |
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| **Credits** | **Department** | **Representative Instructor** | |
| | | Name | Email |
| 3 | Mechanical Engineering Major | Kim, Min Soo | minskim@snu.ac.kr |
| 1. Goals | 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. | | |
| 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

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| 4.Lecture Plan | [ 1 Week ]     Introduction |
| | [ 2 Week ]     Equation of State |
| | [ 3 Week ]     The First Law of Thermodynamics, Applications |
| | [ 4 Week ]     Consequences of the First Law, The Second Law of Thermodynamics |
| | [ 5 Week ]     Application of the Second Law, Thermodynamic Potentials |
| | [ 6 Week ]     The Chemical Potential, The Third Law of Thermodynamics |
| | [ 7 Week ]     Statistical Thermodynamics |
| | [ 8 Week ]     The Nature of Thermodynamics |
| | [ 9 Week ]     The Classical Statistical Treatment of an Ideal Gas |
| | [ 10 Week ]     The Heat Capacity of a Diatomic Gas |
| | [ 11 Week ]     The Heat Capacity of a Solid |
| | [ 12 Week ]     Bose-Einstein Gases |
| | [ 13 Week ]     Fermi-Dirac Gases |
| | [ 14 Week ]     Compressed Gases and Liquids |
| | [ 15 Week ]     Kinetic Theory of Gases |