

Thermodynamics and Statistical Physics (BMETE11AP60)

Schedule for semester 2025/26/2

Red denotes material beyond textbook, covered by supplementary notes

Week	Date	Topic	Chapter in Finn's 3 rd ed.	Additional reading
1	Feb. 19	Thermal equilibrium; Temperature; 0th law; Temperature scales; ideal gas	1	SJ 18.1-18.4
2	Feb. 26	Reversible and irreversible processes; Thermodynamic work	2	SJ 19.4, 21.3
3	Mar. 5	Heat and internal energy; 1st law; Heat Capacity, specific heat and latent heat	3	SJ 19.1-19.3, 19.5
4	Mar. 12	Heat engines and 2nd law; Thermodynamic temperature scale; Carnot cycle; Otto cycle	4	SJ 21.1-21.5
5	Mar. 19	Entropy; Clausius inequality, Fundamental thermodynamic relation	5	SJ 21.6-21.8
6	Mar. 26	Thermodynamic potentials; Thermodynamic equilibrium; Maxwell relations	7, 11	
7	Apr. 16	Some applications of thermodynamics	3, 8	
8	Apr. 23	3rd law of thermodynamics	12	
9	Apr. 30	Intro to statistical physics; Micro- and macrostates; Microcanonical and canonical ensembles	6	
10	May 7	Kinetic theory of gases; Maxwell-Boltzmann distribution, Barometric formula	6	SJ 20.1-20.5, SMM 10.1-10.2
11	May 14	Mean free path approximation; heat diffusion and viscosity		
12	May 21	Phases and phase changes	10	
13	May 28	Quantum (Bose-Einstein and Fermi-Dirac) statistics	13	SMM 10.3-10.5