Course Schedule

This schedule is subject to change.

In the textbook-sections column, HRW stands for Halliday, Resnick, Walker, *Fundamentals of Physics*, and HRK for Halliday. Resnick, Krane, *Physics*. All other sections are from Callen.

Date	Textbook sections	Topics	Homework, Exam
W 8/23		Course introduction: Slides | Video	
F 8/25	HRW 18.1, 18.4 (HRK 21.1, 23.2)	Heat and temperature: Slides | Video	
M 8/28	HRW 18.4, 18.5 (HRK 23.3, 23.4)	Heat capacity, latent heat, and the first law: Slides | Video	
W 8/30	HRW 19.2, 19.3 (HRK 21.5)	Ideal gases 1: Slides | Video	
F 9/01	HRW 19.4, 19.7 - 19.9 (HRK 23.6, 23.7)	Ideal gases 2: Slides | Video	
M 9/04		Labor Day	
W 9/06	HRW 20.1 (HRK 24.1, 24.2)	Entropy: Slides | Video	
F 9/08	HRW 20.1 (HRK 24.3, 24.4)	Entropy and the second law: Slides | Video	
M 9/11	Intro, 1.1 - 1.6	The internal energy; Postulate I: Slides | Video	HW 1 (basics) due
W 9/13	1.7, 1.8	Work and heat: Slides | Video	
F 9/15	1.9, 1.10	Postulates II, III, IV: Slides | Video	
M 9/18	2.1, 2.2	Intensive parameters; Equations of state: Slides | Video	HW 2 (Ch. 1) due
W 9/20	2.3, 2.4	Entropic intensive parameters; Temperature: Slides | Video	
F 9/22	2.5, 2.7	More about the temperature; Mechanical equilibrium: Slides | Video	
M 9/25	2.7, 2.8	Mechanical equilibrium; Equilibrium with respect to matter flow: Slides | Video	HW 3 (Ch. 2) due
W 9/27	3.1	The Euler equation: Slides | Video	
F 9/29	3.2	The Gibbs-Duhem relation: Slides | Video	
M 10/02	3.3	Summary of formal structure: Slides | Video	HW 4 (Ch. 2) due
W 10/04		Review for Exam 1 (6:15 PM - 7:05 PM, Place TBA)	
F 10/06		Homecoming	
M 10/09	3.4	The simple ideal gas; Multicomponent simple ideal gas: Slides | Video	Exam 1: Basics, and Chs. 1 and 2 (8:20 PM - 10:10 PM, Place TBA)
W 10/11	3.5	The ideal van der Waals fluid: Slides | Video	
F 10/13	3.5, 3.6	Two problems from Section 3.5; Electromagnetic radiation: Slides | Video	
M 10/16	3.7	The rubber band: Slides | Video	HW 5 (Ch. 3) due
W 10/18	3.8, 3.9	Magnetic systems; Molar heat capacity, etc.: Slides | Video	
F 10/20	4.1, 4.2	Classification of thermodynamic processes: Slides | Video	
M 10/23	4.3, 4.4	Irreversibility; Heat flow: Slides | Video	HW 6 (Ch. 3) due
W 10/25	4.5, 4.6	The maximum work theorem; Coefficients of performance: Slides | Video	
F 10/27	4.7, 4.8	The Carnot cycle; Measurability of the temperature: Slides | Video	
M 10/30	4.9, 4.10	Other criteria of engine performance; Other cyclic processes: Slides | Video	HW 7 (Ch. 4) due
W 11/01	5.1, 5.2	The energy minimum principle; Legendre transformations: Slides | Video	
F 11/03	5.3, 5.4	Thermodynamic potentials; Generalized Massieu functions: Slides | Video	
M 11/06	6.1, 6.2	The minimum principles for thermodynamic potentials; The Helmholtz free energy: Slides | Video	HW 8 (Ch. 4) due
W 11/08	6.3	The enthalpy: Slides | Video	
F 11/10		Veterans Day	
M 11/13	6.4	The Gibbs free energy: Slides | Video	
M 11/13		Review for Exam 2 (6:15 PM - 7:05 PM, Place TBA)	HW 9 (Ch. 5) due
W 11/15	7.1 - 7.3	The Maxwell relations; Reduction of derivatives 1: Slides | Video	
R 11/16			Exam 2, Chs. 3 - 5 (8:20 PM - 10:10 PM, Place TBA)
F 11/17	7.3, 7.4	Reduction of derivatives 2; Applications: Slides | Video	
M 11/20	8.1, 8.2	Intrinsic stability; Stability conditions for thermodynamic potentials: Slides | Video	HW 10 (Ch. 6) due
W 11/22		Thanksgiving break	
F 11/24		Thanksgiving break	
M 11/27	8.2 - 8.5	Physical consequences of stability; Le Chatelier's principle, etc.: Slides | Video	HW 11 (Ch. 7) due
W 11/29	9.1, 9.2	First-order phase transitions; Latent heat: Slides | Video	
F 12/01	9.3, 9.4	The Clapeyron equation; Unstable isotherms: Slides | Video	
M 12/04	9.5, 9.6	General attributes; Gibbs phase rule: Slides | Video	
W 12/06	11.1 - 11.3	The Nernst postulate (aka the third law): Slides | Video	HW 12 (Chs. 8, 9) due
W 12/06		Review for Exam 3 (6:15 PM - 7:05 PM, Place TBA)	
R 12/14			Exam 3, Chs. 6 - 9 (10:00 AM - 12:00 PM, NPB1002)