

**Lesson Plan Format**  
 18 weeks (From January 2018 to April 2018)

Name of Assistant / Associate Professor ✓  
 Class and Section  
 Subject

..... Monika Devi  
 ..... M.Sc. and B.Sc.  
 ..... Statistical Mechanics

**Week 1 (January 1-6)**  
**Chapter 1**  
 01/01/2018 Introduction - phase space, ensembles,  
 02/01/2018 Types of ensembles.  
 03/01/2018 Liouville theorem & conservation of extension  
 04/01/2018 Equation of motion,  
 05/01/2018 Equal a priori probability.  
 06/01/2017 Statistical equilibrium.

**Week 2 (January 8-13)**  
**Chapter 2**  
 08/01/2018 Revision of chapter - 1.  
 09/01/2018 Microcanonical ensemble.  
 10/01/2018 " "  
 11/01/2018 Quantization of phase-space.  
 12/01/2018 classical limit.  
 13/01/2018 " "

**Week 3 (January 15-20)**  
**Chapter 3**  
 15/01/2018 Revision of chapter 1-2.  
 16/01/2018 Test of chapters 1 & 2.  
 17/01/2018 Symmetry of wave functions.  
 18/01/2018 " "  
 19/01/2018 " "  
 19/01/2018 Effect of symmetry on counting various distributions M.G.  
 20/01/2018 " "

**Week 4 (January 22-27)**  
**Chapter 4**  
 22/01/2018 — HOLIDAY —  
 23/01/2018 " "  
 24/01/2018 Problems of Unit - 1  
 25/01/2018 Revision of Unit - 1  
 26/01/2018 — HOLIDAY —

27/01/2018	Test of Unit - I
Week 5 (January 29 - Feb 3)	
Chapter 5	
29/01/2018	Introduction of types of gases.
30/01/2018	Entropy of an ideal gas.
31/01/2018	Gibbs paradox
01/02/2018	Sackur-Tetrode equation in case of ideal gas
02/02/2018	Entropy of a system in contact with a reservoir
03/02/2018	Ideal gas in a Canonical ensemble
Week 6 (Feb 5-10)	
Chapter 6	
05/02/2018	Grand Canonical ensembles
06/02/2018	99
07/02/2018	Revision of chapter - 1.
08/02/2018	Ideal gas in grand Canonical ensemble
09/02/2018	Sackur-Tetrode equation in G.C.E.
10/02/2018	HOLIDAY
Week 7 (Feb 12-17)	
Chapter 7	
12/02/2017	Sackur - Tetrode equation in Canonical ensemble
13/02/2017	HOLIDAY
14/02/2017	Numericals of chapter - 2.
15/02/2017	Revision of Chapter 5/6
16/02/2017	Comparison of various types of ensembles.
17/02/2017	99
Week 8 (Feb 19-24)	
Chapter 8	
19/02/2018	99
20/02/2018	Quantum distribution in Canonical ensembles
21/02/2018	Quantum distribution in Microcanonical "
22/02/2018	" Grand Canonical ensembles
23/02/2018	Revision of Chapter 2 & 3
24/02/2018	Numericals of Unit - 2.
Week 9 (Feb 26 - March 03)	
Chapter 9	
26/02/2018	Problems of Unit - 2
27/02/2018	Test of Unit - 2
28/02/2018	// HOLIDAY //
01/03/2018	

02/03/2018

03/03/2018

/ HOLIDAY /

Week 10(March 5-10)

Chapter 10

05/03/2018

Introduction of classical statistical & quantum statistics

06/03/2018

Transition from C.S.M to Q.S.M.

07/03/2018

Indistinguishability and quantum statistics

08/03/2018

Identical particles & symmetry requirements

09/03/2018

B-F statistics

10/03/2018

99

Week 11(March 12-17)

Chapter

12/03/2018

Revision of chapter-10

13/03/2018

Fermi dirac statistics

14/03/2018

99

15/03/2018

Maxwell Boltzmann statistics

16/03/2018

Comparison b/w B-E, F-D & M-B statistics

17/03/2018

Bose Einstein statistics

Week 12(March 19-24)

Chapter

19/03/2018

Revision of chapter-11

20/03/2018

Thermal properties of B-E gas

21/03/2018

99

22/03/2018

99

23/03/2018

← HOLIDAY →

24/03/2018

liquid Helium

Week 13(March 26-31)

Chapter

26/03/2018

Energy & pressure of F-D gas

27/03/2018

99

28/03/2018

Electrons in metals & thermionic emission

29/03/2018

→ HOLIDAY →

30/03/2018

Problems of Unit-3

31/03/2018

Test of Unit-3

Week 14(April 02-07)

Chapter

02/04/2018

Introduction, cluster expansion for a classical gas

03/04/2018

virial equation of state

04/04/2018

van der Waals gas

05/04/2018 Phase transition of second kind.

06/04/2018 Ising Model - I

07/04/2018 Ising Model - II

**Week 15 (April 09-14)**

**Chapter**

09/04/2018 Ising Model - II

10/04/2018 Revision of chapter - 14.

11/04/2018 Bragg Williams Approximation.

12/04/2018

13/04/2018 — HOLIDAY —

14/04/2018 — HOLIDAY —

**Week 16 (April 16-21)**

**Chapter**

16/04/2018 Fowler Guggenheim Approximation.

17/04/2018

18/04/2018 — HOLIDAY —

19/04/2018 Fluctuation in ensembles.

20/04/2018 Energy fluctuation in quantum statistics

21/04/2018 Concentration fluctuation in quantum statistics

**Week 17 (April 23-28)**

**Chapter**

23/04/2017 One dimensional random walk

24/04/2017 "

25/04/2017 Brownian Motion

26/04/2017

27/04/2017 Revision of Unit - 3.

28/04/2018 Problems of Unit - 3

**Week 18 (April 29-30)**

**Chapter**

30/04/2018 Test of Unit - 3.