(Lesson Plan) ODD

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (*Odd Semester*)
Session – (2022-23)

Name of the Teacher: <u>**Dr Renu Bala**</u>

Department: <u>**Physics**</u>

Class: <u>**B.Sc (II)**</u>

Subject: <u>**Statistical Physics(I)**</u>

Section (s):   <u>**Non-Medical,Vocational**</u>

S.No	Date (Monthly)		Topics Covered	Academic Activity Undertaken*
	From	**To**		
1	August,2022	30th Sep,2022	Basic ideas of Statistical Physics, Scope of Statistical Physics, basic ideas about probability, distribution of four distinguishable particles in two compartments of equal size. Concept of macrostates, microstates, thermodynamic probability, effects of constraints on the system, distribution of n particles in two compartments, deviation from the state of maximum probability.	✓ **Lecture** ✓ **Group Discussions** ✓ **Class Test**
2	1st Oct,2022	31st Oct,2022	Equilibrium state of dynamic system, distribution of distinguishable n particles in k compartments of unequal sizes. Phase space and its division into elementary cells, three kinds of statistics. The basic approach in the three statistics. Maxwell-Boltzman statistics applied to an ideal gas in equilibrium	✓ **Lecture** ✓ **Group Discussions** ✓ **Class test**

3	1st Nov,2022	25th Nov,2022	Experimental verification of Maxwell-Boltzman's law of distribution of molecular speeds. Need of quantum statistics--B.E. statistics, derivation of Planck's law of radiation, deduction of Wien's displacement law and Stefan's law from Planck's law F.D. statistics, Comparison of M.B., B.E. and F.D. statistics.	✓ **Lecture** ✓ **Assignments** ✓ **Mid-term test**

*Any of these – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc.

Other Methods adopted by the teacher – Please write the specific teaching method

EVEN
(Lesson Plan)

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (*Even Semester*)
Session – (2022-23)

Name of the Teacher: **Dr Renu Bala**

Department: **Physics**

Class: **B.Sc (II)**

Subject: **Statistical Physics (II)**

Section (s):   **Non-Medical, Vocational**

S.No.	Date (Monthly)		Topics Covered	Academic Activity Undertaken*
	From	**To**		
1	16 January 2023	28 Februray 2023	Statistical definition of entropy, change of entropy of a system, additive nature of entropy, law of increase of entropy, reversible and irreversible processes with examples. Work done in a reversible process. Examples of increase of entropy in natural processes. Entropy and disorder. Brief review of the terms and Laws of Thermodynamics, Carnot's Cycle. Entropy changes in Carnot's Cycle.	✓ **Lecture** ✓ **Group Discussions** ✓ **Class Test**
2	1st March ,2023	31th March,2023	Applications of thermodynamics to thermoelectric effect, change of entropy along a reversible path in a P.V. diagram, entropy of a perfect gas. Equation of state of ideal gas from simple statistical consideration. Heat death of the universe. Derivation of Maxwell's thermodynamical relations and applications, cooling produced by adiabatic stretching, adiabatic compression	✓ **Lecture** ✓ **Group Discussions** ✓ **Class Test**
3	1st April,2022	25th April,2022	Change of internal energy with volume. Expression for $(C_p\text{-}C_v)$ Change of state and Clayperon Equation. Thermodynamical	✓ **Lecture** ✓ **Assignments** ✓ **Oral Tests**

			treatment of Joule-Thomson effect. Use of Joule-Thomson effect for liquification of helium. Production of very low temperature by adiabatic demagnetisation.	✓ **Group Discussions**

*Any of these – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc.
Other Methods adopted by the teacher – Please write the specific teaching method