

## Lesson Plan

**Name of Assistant/Associate Professor: Ankit**

**Class and section: B.Sc III M and non medical**

**Chemistry Lesson Plan: 15 Week (From January 2018 to April 2018)**

Week 1: Chapter 1:Introduction to statistical Mechanics
Week 1,Day 3, Date:03/01/2018 <ul style="list-style-type: none"><li>○ 1.1 Need for Statistical Thermodynamics</li><li>○ 1.2 Thermodynamics Probability</li><li>○ 1.3 Maxwell Boltzmann Distribution Statistics</li></ul>
Week 1, Day 4, Date: 04/01/2018 <ul style="list-style-type: none"><li>○ 1.4 Born Oppenheimer Approximation</li><li>○ 1.5 Partition Function</li></ul>
Week 2,Day 3,Date:10/01/2018 <ul style="list-style-type: none"><li>○ 1.6 Significance of Partition Function</li><li>○ 1.7 Factorization of Partition Function</li></ul>
Week 2, Day 4, Date:11/01/2018 <ul style="list-style-type: none"><li>○ 1.8 Translational Partition Function</li><li>○ 1.9 Vibrational Partition Function</li><li>○ 1.10 Rotational Partition Function</li></ul>
Week 3 Chapter 2: Photochemistry
Week 3,Day 3, Date:17/01/2018 <ul style="list-style-type: none"><li>○ 2.1 Interaction of radiation with matter</li><li>○ 2.2 Difference between Thermal and Photochemical Processes</li><li>○ 2.3 Laws Governing Absorption of Light</li></ul>
Week 3, Day 4, Date:18/01/2018 <ul style="list-style-type: none"><li>○ 2.4 Some other terms commonly used in Spectroscopy</li><li>○ 2.5 Laws Governing Photochemical Reactions</li><li>○ 2.6 Quantum Yield/Quantum Efficiency</li></ul>
Week 4,Day 4,Date:25/01/2018 <ul style="list-style-type: none"><li>○ 2.7 Fluorescence and Phosphorescence in terms of Excitation of Electrons</li></ul>

<p>(Jabolonski Diagram)</p> <ul style="list-style-type: none"> <li>○ 2.8 Main Points of Difference Between Phosphorescence and Fluorescence</li> <li>○ 2.9 Photosensitization</li> </ul>
<p>Week 5,Day 4,Date:01/02/2018</p> <ul style="list-style-type: none"> <li>○ 2.10 Quenching of Fluorescence: Stern Volmer Equation</li> <li>○ 2.11 Photoinhibitors</li> <li>○ 2.12 Photostationary State</li> </ul>
<p>Week 6,Day 3,Date:07/02/2018</p> <ul style="list-style-type: none"> <li>○ Problems from Chapter 1</li> </ul>
<p>Week 6,Day 4,Date:08/02/2018</p> <ul style="list-style-type: none"> <li>○ Problems from Chapter 2</li> </ul>
<p>Week 7,Day 3,Date:14/02/2018</p> <ul style="list-style-type: none"> <li>○ Test of Chapter 2 (Photochemistry)</li> </ul>
<p>Week 7,Day 4,Date:15/02/2018</p> <ul style="list-style-type: none"> <li>○ 3.1 Mode of Expressing the Concentration of a Solution</li> <li>○ 3.2 Chemical Potential</li> <li>○ 3.3 Fugacity, Activity and Activity coefficient</li> </ul>
<p>Week 8,Day 3,Date:21/02/2018</p> <ul style="list-style-type: none"> <li>○ 3.4 Rault's Law</li> <li>○ 3.5 Ideal and Non Ideal Solutions</li> <li>○ 3.6 Thermodynamics Properties of Ideal Solution</li> </ul>
<p>Week 8,Day 4,Date:22/02/2018</p> <ul style="list-style-type: none"> <li>○ 3.7 Vapour Pressure of Ideal Solution</li> <li>○ 3.8 Deviation from Ideal Behaviour</li> <li>○ 3.9 Azeotropes</li> </ul>
<p>Week 10,Day 3,Date:07/03/2018</p> <ul style="list-style-type: none"> <li>○ 3.10 Colligative Properties</li> <li>○ 3.11 Lowering of Vapour Pressure</li> <li>○ 3.12 Thermodynamics Derivation of Relative Lowering of Vapour Pressure</li> </ul>
<p>Week 10,Day 4,Date:08/03/2018</p> <ul style="list-style-type: none"> <li>○ 3.13 Elevation in the Boiling Point</li> <li>○ 3.14 Thermodynamics Derivation of Elevation in the boiling point</li> <li>○ 3.15 Depression in freezing point</li> </ul>
<p>Week 11,Day 3,Date:14/03/2018</p> <ul style="list-style-type: none"> <li>○ 3.16 Thermodynamics Derivation of Depression in the Freezing point</li> <li>○ 3.17 Osmotic Pressure</li> </ul>

<ul style="list-style-type: none"> <li>○ 3.18 Thermodynamics Derivation of osmotic Pressure</li> </ul>
<p>Week 11, Day 4, Date: 15/03/2018</p> <ul style="list-style-type: none"> <li>○ 3.19 Abnormal Molecular Mass</li> <li>○ 3.20 Van't Hoff Factor</li> <li>○ 3.21 Application in calculating molar masses of normal, dissociated and associated solutes in solution</li> </ul>
<p>Week 12, Day 3, Date: 21/03/2018</p> <ul style="list-style-type: none"> <li>○ Assignment from Chapter 2 And 3</li> </ul>
<p>Week 12, Day 4, Date: 22/03/2018</p> <ul style="list-style-type: none"> <li>○ 4.1 Explanation of Terms involved in Phase Rule</li> <li>○ 4.2 Criteria for Phase Equilibrium for Multi-Component System</li> <li>○ 4.3 Derivation of Gibb's Phase Rule</li> </ul>
<p>Week 13, Day 3, Date: 28/03/2018</p> <ul style="list-style-type: none"> <li>○ 4.4 Phase Diagrams</li> <li>○ 4.5 Application of Phase rule to one component system</li> <li>○ 4.6 Water System</li> </ul>
<p>Week 14, Day 3, Date: 04/04/2018</p> <ul style="list-style-type: none"> <li>○ 4.7 Carbon Dioxide System</li> <li>○ 4.8 Phase rule Diagrams for Two Components Systems</li> </ul>
<p>Week 14, Day 4, Date: 05/04/2018</p> <ul style="list-style-type: none"> <li>○ 4.9 Types of two Components involving Solid-Liquid Equilibria</li> <li>○ 4.10 General Discussion of the Phase Diagrams for Two Component system</li> <li>○ 4.11 Experimental Determination of the Phase Diagrams of Two Component System</li> </ul>
<p>Week 15, Day 3, Date: 11/04/2018</p> <ul style="list-style-type: none"> <li>○ 4.12 Study of Two Component System (Pb-Ag System)</li> <li>○ 4.13 Pattinson's Process for Desilverisation of Lead</li> </ul>
<p>Week 15, Day 4, Date: 12/04/2018</p> <ul style="list-style-type: none"> <li>○ Problems from Chapter 3 (Solutions) and Chapter 4 (Phase Equilibrium)</li> </ul>
<p>Week 16, Day 4, Date: 19/04/2018</p> <ul style="list-style-type: none"> <li>○ Revision And Practical</li> </ul>
<p>Week 17, Day 3, Date: 25/04/2018</p> <ul style="list-style-type: none"> <li>○ Revision And Practical</li> </ul>
<p>Week 17, Day 4, Date: 26/04/2018</p> <ul style="list-style-type: none"> <li>○ Revision And Practical</li> </ul>

