

## Lesson Plan (2023-24)-Odd Semester

**Name of the Assistant Professor: Mr. VIPIN**

**Class and Section: M.Sc. (Previous)**

**Subject: Sustainable and Green Chemistry (CHE-106)**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>1</b>	16.08.2023	Introduction about the syllabus & Course
	17.08.2023	History of emergence of Green Chemistry ( <b>Unit-I</b> )
	18.08.2023	Definition, Need and role of Green Chemistry
	19.08.2023	Definition, Need and role of Green Chemistry
<b>2</b>	21.08.2023	Principles and concepts of green chemistry synthesis
	22.08.2023	Principles and concepts of green chemistry synthesis
	23.08.2023	Chemistry in the context of sustainable development
	24.08.2023	Green Chemistry v/s Environmental Chemistry
	25.08.2023	Green Chemistry v/s Environmental Chemistry
	26.08.2023	End of pipe v/s cleaner production
<b>3</b>	28.08.2023	End of pipe v/s cleaner production
	29.08.2023	Current status and future perspective
	30.08.2023	<b>Raksha Bandhan</b>
	31.08.2023	The twelve principles of Green Chemistry and their illustrations with eg.
	01.09.2023	The twelve principles of Green Chemistry and their illustrations with eg.
	02.09.2023	Evaluation of Greenness
<b>4</b>	04.09.2023	Environmental factor, Atom Economy
	05.09.2023	Calculation of atom economy of the rearrangement
	06.09.2023	<b>Janmashtami</b>
	07.09.2023	Addition, substitution and elimination reactions
	08.09.2023	Catalysis and Renewable raw materials ( <b>Unit-II</b> )
	09.09.2023	Catalysis and Renewable raw materials
<b>5</b>	11.09.2023	Introduction to catalysis
	12.09.2023	Homogeneous and Heterogeneous catalysis
	13.09.2023	Homogeneous and Heterogeneous catalysis
	14.09.2023	Homogeneous and Heterogeneous catalysis and Bio-catalysis
	15.09.2023	Homogeneous and Heterogeneous catalysis and Bio-catalysis
	16.09.2023	Photocatalysis

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>6</b>	18.09.2023	Photocatalysis
	19.09.2023	Catalysis for Green Chemistry with examples
	20.09.2023	Catalysis for Green Chemistry with examples
	21.09.2023	Renewable raw materials
	22.09.2023	Chemical products based on renewable sources
	23.09.2023	<b>Shaheedi Divas</b>
<b>7</b>	25.09.2023	<b>Test (Unit I &amp; II)</b>
	26.09.2023	Alternative Green solvents ( <b>Unit-III</b> )
	27.09.2023	Alternative Green solvents
	28.09.2023	Volatile organic compounds (VOCs)
	29.09.2023	Volatile organic compounds (VOCs)
	30.09.2023	Supercritical fluids
<b>8</b>	02.10.2023	<b>Mahatma Gandhi Jayanti</b>
	03.10.2023	Alternatives in Advancement of Green Chemistry in extraction and chromatography
	04.10.2023	Alternatives in Advancement of Green Chemistry in extraction and chrom.
	05.10.2023	Ionic liquids as solvents: its types, properties and applications
	06.10.2023	Ionic liquids as solvents: its types, properties and applications
	07.10.2023	Green technology and sources of alternative energy ( <b>Unit-IV</b> )
<b>9</b>	09.10.2023	Green technology and sources of alternative energy
	10.10.2023	Photochemical and Electrochemical reactions
	11.10.2023	Photochemical and Electrochemical reactions
	12.10.2023	Photochemical and Electrochemical reactions
	13.10.2023	Green photo-chemical reactions
	14.10.2023	Green photo-chemical reactions
<b>10</b>	16.10.2023	Green Chemical Reactions under Microwave
	17.10.2023	Green Chemical Reactions under Microwave
	18.10.2023	Green Chemical Reactions under Microwave
	19.10.2023	Role of Sonication in green synthesis
	20.10.2023	Ball milling in Green chemical synthesis with examples
	21.10.2023	Ball milling in Green chemical synthesis with examples

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>11</b>	23.10.2023	Flow techniques and role of Flow chemistry for the sustainable development
	24.10.2023	<b>Dussehra</b>
	25.10.2023	Flow techniques and role of Flow chemistry for the sustainable development
	26.10.2023	Flow techniques and role of Flow chemistry for the sustainable development
	27.10.2023	Flow techniques and role of Flow chemistry for the sustainable development
	28.10.2023	<b>Maharishi Valmiki Jayanti</b>
<b>12</b>	30.10.2023	<b>Test (Unit II &amp; IV)</b>
	31.10.2023	Problem Discussion
	01.11.2023	<b>Haryana Day</b>
	02.11.2023	Assignment
	03.11.2023	Assignment
	04.11.2023	Assignment
<b>13</b>	06.11.2023	Revision
	07.11.2023	Revision
	08.11.2023	Revision
	09.11.2023	Revision
	10.11.2023	<b>Diwali Vacations</b>
	11.11.2023	<b>Diwali Vacations</b>
<b>14</b>	13.11.2023	<b>Diwali Vacations</b>
	14.11.2023	<b>Diwali Vacations</b>
	15.11.2023	<b>Diwali Vacations</b>
	16.11.2023	<b>Diwali Vacations</b>
	17.11.2023	Presentation on important topics
	18.11.2023	Presentation on important topics
<b>15</b>	20.11.2023	Presentation on important topics
	21.11.2023	Presentation on important topics
	22.11.2023	Presentation on important topics
	23.11.2023	Presentation on important topics
	24.11.2023	Presentation on important topics
	25.11.2023	Presentation on important topics

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>16</b>	27.11.2023	<b>Guru Nanak Dev Jayanti</b>
	28.11.2023	Presentation on important topics
	29.11.2023	Presentation on important topics
	30.11.2023	Revision
	01.12.2023	Revision
	02.12.2023	Revision
<b>17</b>	04.12.2023	Revision
	05.12.2023	Revision
	06.12.2023	Revision

**Lesson Plan (2023-24)-Odd Semester (UG)**

**Name of the Assistant Professor: Mr. VIPIN**

**Subject: Inorganic Chemistry**

**Class and Section: B.Sc 1<sup>st</sup> (Medical & NM)**

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>1</b>	24.07.2023	Introduction about the syllabus and course
	25.07.2023	Idea of de Broglie matter waves (Section-A)
	26.07.2023	
	27.07.2023	
	28.07.2023	
	29.07.2023	
<b>2</b>	31.07.2023	<b>Shaheed Udham Singh Martyrdom Day</b>
	01.08.2023	Idea of de Broglie matter waves
	02.08.2023	
	03.08.2023	
	04.08.2023	
	05.08.2023	
<b>3</b>	07.08.2023	Heisenberg uncertainty principle
	08.08.2023	Atomic orbitals
	09.08.2023	
	10.08.2023	
	11.08.2023	
	12.08.2023	
<b>4</b>	14.08.2023	Quantum numbers
	15.08.2023	<b>Independence Day</b>
	16.08.2023	
	17.08.2023	
	18.08.2023	
	19.08.2023	
<b>5</b>	21.08.2023	Quantum numbers
	22.08.2023	Radial and angular wave functions and probability distribution curves
	23.08.2023	
	24.08.2023	
	25.08.2023	
	26.08.2023	

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>6</b>	28.08.2023	Radial and angular wave functions and probability distribution curves
	29.08.2023	Shapes of s, p, d orbitals
	30.08.2023	<b>Raksha Bandhan</b>
	31.08.2023	
	01.09.2023	
	02.09.2023	
<b>7</b>	04.09.2023	Shapes of s, p, d orbitals
	05.09.2023	Problem Discussion (Section-A)
	06.09.2023	<b>Janmashtami</b>
	07.09.2023	
	08.09.2023	
	09.09.2023	
<b>8</b>	11.09.2023	General principles of periodic table: Aufbau and Pauli exclusion principles (Section-B)
	12.09.2023	Hund's multiplicity rule, Electronic configurations of the elements
	13.09.2023	
	14.09.2023	
	15.09.2023	
	16.09.2023	
<b>9</b>	18.09.2023	Effective nuclear charge, Slater's rules
	19.09.2023	Atomic and ionic radii, ionization energy, electron affinity
	20.09.2023	
	21.09.2023	
	22.09.2023	
	23.09.2023	<b>Shaheedi Divas</b>
<b>10</b>	25.09.2023	Electronegativity –definition, methods of determination
	26.09.2023	Test (Section-A &B)
	27.09.2023	
	28.09.2023	
	29.09.2023	
	30.09.2023	

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>11</b>	02.10.2023	<b>Mahatma Gandhi Jayanti</b>
	03.10.2023	Valence bond theory and its limitations (Section-C)
	04.10.2023	
	05.10.2023	
	06.10.2023	
	07.10.2023	
<b>12</b>	09.10.2023	Directional characteristics of covalent bond
	10.10.2023	various types of hybridization
	11.10.2023	
	12.10.2023	
	13.10.2023	
	14.10.2023	
<b>13</b>	16.10.2023	Shapes of simple inorganic molecules and ions (BeF <sub>2</sub> , BF <sub>3</sub> , CH <sub>4</sub> and PF <sub>5</sub> )
	17.10.2023	Shapes of simple inorganic molecules and ions (SF <sub>6</sub> , IF <sub>7</sub> , SO <sub>4</sub> <sup>2-</sup> , and ClO <sub>4</sub> <sup>4-</sup> )
	18.10.2023	
	19.10.2023	
	20.10.2023	
	21.10.2023	
<b>14</b>	23.10.2023	Valence shell electron pair repulsion (VSEPR) theory
	24.10.2023	<b>Dussehra</b>
	25.10.2023	
	26.10.2023	
	27.10.2023	
	28.10.2023	<b>Maharishi Valmiki Jayanti</b>
<b>15</b>	30.10.2023	MO theory of heteronuclear (CO and NO) diatomic molecules
	31.10.2023	bond strength and bond energy, percentage ionic character & electronegativity difference
	01.11.2023	<b>Haryana Day</b>
	02.11.2023	
	03.11.2023	
	04.11.2023	

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>16</b>	06.11.2023	Ionic structures (NaCl,CsCl, ZnS(Zinc Blende), CaF <sub>2</sub> ) radius ratio (Section-D)
	07.11.2023	Coordination number, limitation of radius ratio rule, lattice defects,
	08.11.2023	
	09.11.2023	
	10.11.2023	<b>Diwali Vacations</b>
	11.11.2023	<b>Diwali Vacations</b>
<b>17</b>	13.11.2023	<b>Diwali Vacations</b>
	14.11.2023	<b>Diwali Vacations</b>
	15.11.2023	<b>Diwali Vacations</b>
	16.11.2023	<b>Diwali Vacations</b>
	17.11.2023	
	18.11.2023	
<b>18</b>	20.11.2023	semiconductors, lattice energy (mathematical derivation excluded) and Born-Haber cycle
	21.11.2023	solvation energy and its relation with solubility of ionic solids
	22.11.2023	polarizing power and polarizability of ions, Fajan's rule
	23.11.2023	



**Lesson Plan (2023-24)-Odd Semester (UG)**

Name of the Assistant Professor: Mr. VIPIN

Subject: Organic Chemistry

Class and Section: 5<sup>th</sup> sem

Week	Date	Topics
<b>1</b>	24.07.2023	
	25.07.2023	
	26.07.2023	
	27.07.2023	
	28.07.2023	Introduction about the syllabus and course
	29.07.2023	Principle of nuclear magnetic resonance (Section-A)
<b>2</b>	31.07.2023	<b>Shaheed Udham Singh Martyrdom Day</b>
	01.08.2023	
	02.08.2023	
	03.08.2023	
	04.08.2023	The PMR spectrum, number of signals
	05.08.2023	Peak areas, equivalent and non-equivalent protons positions of signals
<b>3</b>	07.08.2023	
	08.08.2023	
	09.08.2023	
	10.08.2023	
	11.08.2023	Peak areas, equivalent and non-equivalent protons positions of signals
	12.08.2023	Chemical shift, shielding and de-shielding of protons
<b>4</b>	14.08.2023	
	15.08.2023	<b>Independence Day</b>
	16.08.2023	
	17.08.2023	
	18.08.2023	Proton counting, splitting of signals
	19.08.2023	Proton counting, splitting of signals
<b>5</b>	21.08.2023	
	22.08.2023	
	23.08.2023	
	24.08.2023	
	25.08.2023	Coupling constants
	26.08.2023	Magnetic equivalence of protons

Week	Date	Topics
<b>6</b>	28.08.2023	
	29.08.2023	
	30.08.2023	<b>Raksha Bandhan</b>
	31.08.2023	
	01.09.2023	Discussion of PMR spectra of the molecules: ethyl bromide, n-propyl bromide (Section-B)
	02.09.2023	isopropyl bromide, 1,1-dibromoethane, 1,1,2-tribromoethane, ethanol
<b>7</b>	04.09.2023	
	05.09.2023	
	06.09.2023	<b>Janmashtami</b>
	07.09.2023	
	08.09.2023	Acetaldehyde, ethyl acetate, toluene, benzaldehyde and acetophenone
	09.09.2023	Simple problems on PMR spectroscopy for structure determination of organic compounds
<b>8</b>	11.09.2023	
	12.09.2023	
	13.09.2023	
	14.09.2023	
	15.09.2023	Test (Section A&B)
	16.09.2023	Problem Discussion
<b>9</b>	18.09.2023	
	19.09.2023	
	20.09.2023	
	21.09.2023	
	22.09.2023	Classification and nomenclature, Monosaccharides (Section-C)
	23.09.2023	<b>Shaheedi Divas</b>
<b>10</b>	25.09.2023	
	26.09.2023	
	27.09.2023	
	28.09.2023	
	29.09.2023	Mechanism of osazone formation, interconversion of glucose and fructose
	30.09.2023	Chain lengthening and chain shortening of aldoses

<b>Week</b>	<b>Date</b>	<b>Topics</b>	
<b>11</b>	02.10.2023	<b>Mahatma Gandhi Jayanti</b>	
	03.10.2023		
	04.10.2023		
	05.10.2023		
	06.10.2023		Configuration of monosaccharides, Erythro and Threo diastereomers
	07.10.2023		Conversion of glucose in to mannose. Formation of glycosides, ether and ester
<b>12</b>	09.10.2023		
	10.10.2023		
	11.10.2023		
	12.10.2023		
	13.10.2023	Determination of ring size of glucose and fructose. Open chain and cyclic structure of D(+)-glucose & D(-) fructose	
	14.10.2023	Mechanism of mutarotation. Structures of ribose and deoxyribose.	
<b>13</b>	16.10.2023		
	17.10.2023		
	18.10.2023		
	19.10.2023		
	20.10.2023	An introduction to disaccharides (maltose, sucrose and lactose) (Section-D)	
	21.10.2023	Polysaccharides without involving structure determination	
<b>14</b>	23.10.2023		
	24.10.2023	<b>Dussehra</b>	
	25.10.2023		
	26.10.2023		
	27.10.2023	Organomagnesium compounds: the Grignard reagents-formation	
	28.10.2023	<b>Maharishi Valmiki Jayanti</b>	
<b>15</b>	30.10.2023		
	31.10.2023		
	01.11.2023	<b>Haryana Day</b>	
	02.11.2023		
	03.11.2023	Structure and chemical reactions	
	04.11.2023	Organozinc compounds: formation and chemical reactions	

<b>Week</b>	<b>Date</b>	<b>Topics</b>
<b>16</b>	06.11.2023	
	07.11.2023	
	08.11.2023	
	09.11.2023	
	10.11.2023	<b>Diwali Vacations</b>
	11.11.2023	<b>Diwali Vacations</b>
<b>17</b>	13.11.2023	<b>Diwali Vacations</b>
	14.11.2023	<b>Diwali Vacations</b>
	15.11.2023	<b>Diwali Vacations</b>
	16.11.2023	<b>Diwali Vacations</b>
	17.11.2023	Organolithium compounds: formation and chemical reactions
	18.11.2023	Test (Section C&D) and Problem Discussion
<b>18</b>	20.11.2023	
	21.11.2023	
	22.11.2023	
	23.11.2023	
	24.11.2023	