

**TEACHING SCHEDULE:****Place:** All the lectures will be conducted in D-103 Classroom**Day & Time:** Wednesday 11:30 – 12:30 pm (Lecture 1)Friday 11:30 – 12:30 pm (Lecture 2 – *Alternate*)

Lecture No:	Topic	Content	Reference
1	<b>Mechanism and stereochemistry of addition, substitution and elimination reactions</b>	Introduction to course and Introduction to addition reactions	<b>TB:</b> 335
2		Mechanism of addition of halogens acids to open chain alkenes	<b>TB:</b> 345-357 <b>RB1:</b> 139-146
3		Stereochemistry of addition of halogens acids to open chain alkenes, Markownikoff's and anti-Markownikoff's addition	<b>TB:</b> 345-348 <b>RB1:</b> 144-148, 220-223
4		Mechanism of addition of halogens to open chain alkenes, stereochemistry of addition of halogens to open chain alkenes	<b>TB:</b> 357-361 <b>RB1:</b> 154-156, 227-229
5		Substitution reactions	<b>TB:</b> 440-460 <b>RB1:</b> 354-383
6		Elimination reactions	<b>TB:</b> 305-326 <b>RB1:</b> 395-413
7	<b>Organic Compounds containing Nitrogen</b>	Preparation of nitroalkanes and nitroarenes, chemical reactions of nitroalkanes	<b>RB1:</b> 615
8		Mechanisms of nucleophilic substitution in nitroarenes and their reductions in acidic, neutral and alkaline media	<b>TB:</b> 705-706
9		Picric acid: preparation and properties, structure and nomenclature of amines, physical properties	<b>TB:</b> 697-698, 899 <b>RB3:</b> 711, 767
10		CA 1	

<b>11</b>		Feedback	
<b>12</b>		Structural features affecting basicity of amines, amine salts as phase-transfer catalysts, preparation of alkyl and aryl amines by reduction of nitro compounds and nitriles	<b>TB:</b> 702-706, 721-724
<b>13</b>		Reductive amination of carbonyl compounds, Gabriel phthalimide reaction and Hofmann rearrangement	<b>TB:</b> 708-710, 711-717 <b>RB1:</b> 756 <b>RB2:</b> 807-813, 879-881
<b>14</b>	<b>Carbohydrates</b>	Classification and nomenclature of carbohydrates, Monosaccharides: General reactions	<b>TB:</b> 1227-1235 <b>RB1:</b> 878-880
<b>15</b>		Chain lengthening by Killiani-Fischer synthesis and chain shortening by Ruff degradation of aldoses	<b>TB:</b> 1235-1237 <b>RB1:</b> 888-890
<b>16</b>		Mechanism of osazone formation, configuration of monosaccharides with reference to glucose	<b>TB:</b> 1237-1243 <b>RB1:</b> 886-887
<b>17</b>		d(+)/l(-) and D/L systems of nomenclature, interconversion of glucose to fructose and glucose to mannose	<b>TB:</b> 1244-1246 <b>RB1:</b> 880-883, 885-886 <b>RB2:</b> 973-976
<b>18</b>		Cyclic structure of D(+)glucose, mechanism of mutarotation, formation of glycosides, ethers and esters, structure of sucrose and inversion of cane sugar	<b>TB:</b> 1247-1250, 1265-1266 <b>RB1:</b> 892-897
<b>19</b>	<b>Chemistry of Organosulfur and organophosphorus compounds</b>	Nomenclature and classification of organosulfur compounds, methods of preparation and chemical reactions of thiols, disulfides and sulphonic acids	<b>RB3:</b> 398-407
<b>20</b>		CA 3	
<b>21</b>		Nomenclature and classification of organophosphorus compounds, preparation of	<b>RB3:</b> 407-410

		phosphines	
22		Phosphorous ylides and their general methods of preparation, Wittig reaction and its synthetic applications	<b>RB3:</b> 410-414
23		Feedback / Revision	

TB = Text Book    RB = Reference Book

**Text books:**

Morrison, R. T., Boyd, R. N., Bhattacharjee, S. K. (2012). *Organic Chemistry*. (7<sup>th</sup> Edition). Pearson India.

Morrison, R. T., Boyd, R. N. (2008). *Organic Chemistry*. (6<sup>th</sup> Edition). Prentice-Hall of India Private Limited.

**Reference Books:**

1. Bruice, P. Y. (2013). *Organic Chemistry*. (3<sup>rd</sup> Edition). Pearson India.

2. Carey, F. C. (2000). *Organic Chemistry*. (4<sup>th</sup> Edition). Tata McGraw-Hill India.

3. Finar, I. L. (2013). *Organic Chemistry*. (6<sup>th</sup> Edition). Pearson India.