**TEACHING SCHEDULE:**

**Place:** All the lectures will be conducted in D-303 Classroom
**Day & Time:** Thursday 12:00 – 01:00 pm (Lecture 1 – *Alternate*)
Saturday 12:00 – 01:00 pm (Lecture 2)

| Lecture No: | Topic | Content | Reference |
|---|---|---|---|
| **1** | **1a) Studies of organic compound containing C, H and O** | Introduction to organic compounds containing C, H, O elements such as alcohols, ethers, aldehydes, ketones, carboxylic acids and esters | **TB, RB** |
| **2** | **1b) Ethers** | Properties of ethers, symmetric and asymmetric ethers | **TB:** 237-238<br>**RB1:** 619-622<br>**RB2:** 196 |
| **3** | | Preparations of ethers: Dehydration of alcohols, Williamson ether synthesis, alkoxymercuration-demercuration | **TB:** 238-242<br>**RB1:** 625-627<br>**RB2:** 195-196 |
| **4** | | Reaction of ethers with acids (HX) and crown ethers | **TB:** 242-243, 478-482<br>**RB1:** 623, 625, 628-630<br>**RB2:** 197-198 |
| **5** | **Aldehydes and Ketones** | Properties of aldehydes and ketones, Geometry and polarity of the carbonyl group | **TB:** 657-660<br>**RB1:** 654-658 |
| **6** | | Preparation of aldehydes: Oxidation of alcohols, reduction of acid chlorides | **TB:** 662-663 |
| **7** | | Ozonolysis of alkene, Preparation of ketones: oxidation of alcohols | **TB:** 358-360, 663<br>**RB1:** 240–242 |
| **8** | | Friedel-Crafts acylation, Reaction of acid chloride with organocopper compounds | **TB:** 666-669<br>**RB1:** 453-457, 473-474 |
| **9** | | Reactions of aldehydes and ketones: General mechanism of nucleophilic addition at carbonyl group | **TB:** 669-671<br>**RB1:** 663-667 |
| **10** | | Oxidation and reduction of aldehyde and ketones, Reaction with amine derivative (imine formation with mechanism) | **TB:** 675-678<br>**RB1:** 682-684, 672-673 |
| **11** | | Cannizaro reaction and addition of Grignard reagents; Addition of carbanions (Aldol condensation) | **TB:** 683-686<br>**RB1:** 715-720 |

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| **12** | | CA 2 | |
| **13** | | Feedback | |
| **14** | **Carboxylic Acids** | Properties of carboxylic acids, preparation of acids: Oxidation of primary alcohols and alkyl benzenes | **TB:** 714-717, 720-721<br>**RB1:** 416-417, 596-597, 737-739, 750-751 |
| **15** | | Hydrolysis of nitriles with mechanism; Reaction of acids: Salt formation | **TB:** 722-723, 725<br>**RB1:** 752-753 |
| **16** | | Conversion to different functional groups (esters, amides) | **TB:** 725-727, 737-739<br>**RB1:** 754-759 |
| **17** | | Conversion to different functional groups (acid chlorides and anhydrides), reduction of acids | **TB:** 726, 737, 740, 763 |
| **18** | **Esters** | Properties of esters; Preparation of esters: from acids | **TB:** 768-769<br>**RB1:** 788-790 |
| **19** | | Preparation of esters: from acid chlorides and anhydrides | **TB:** 762, 764-765, 769<br>**RB1:** 594-595 |
| **20** | | CA 3 | |
| **21** | | Reactions of esters: Conversion to acids (Hydrolysis along with mechanism) | **TB:** 770-771, 776-777<br>**RB1:** 791-799 |
| **22** | | Reactions of esters: Conversion to amides, trans-esterification, reduction to aldehydes and alcohols | **TB:** 771, 778-780<br>**RB1:** 799-800 |
| **23** | | Feedback/Revision | |

**TB = Text Book RB = Reference Book**

**Text Book:**

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

**REFERENCE BOOKS:**

**1. Carey, F. C. (2000). *Organic Chemistry*. (4th Edition). Tata McGraw-Hill India.**

**2. Finar, I. L. (2013). *Organic Chemistry*. (6th Edition). Pearson India.**