

1.	Title of the Course	Reactions and Reagents in Organic Chemistry
2.	Course Number	CY5105
3.	Status of the Course	Core
4.	Structure of Credits	3-0-0-3
5.	Offered To	PG
6.	New Course/Modification to	New
7.	To be Offered by	Department of Chemistry
8.	To take effect from	July 2020
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	<b>Course Objective:</b> To impart a comprehensive knowledge of reaction pathways of substitution, addition, elimination and some important named reactions in organic chemistry. To design synthetic strategies of many important chemicals such as drugs, plastics, food additives, fabrics etc.	
12.	<b>Course Content:</b> Nucleophilic substitution reaction mechanisms; Free radical reactions, allylic halogenation, auto-oxidation, free radical rearrangements; Electrophilic substitution reaction mechanisms, ESR of aromatic compounds, pyrolytic elimination; Addition reactions involving electrophiles, nucleophiles and free-radicals. Grignard, organozinc and organolithium reagents; Enolates- Aldol, Knoevenagel, Claisen, Perkin and Stobbe reactions; Wagner-Meerwin, Pinacol-Pinacolone, PPA cyclization and Fries rearrangement, Wolff and Arndst-Eistert, Hoffmann, Curtius, Schmidt, Lossen, Beckmann reaction; Aldol condensation, Wittig, Prevost, Simmons Smith, Nef reaction, Favorskii, Baeyer-Villiger oxidation, Heck, Suzuki coupling, Mannich, Michael addition, Stork enamine reaction; Robinson annulation, Sharples asymmetric epoxidation, Birch reduction, coupling reactions; Alkaloids, terpenoids, flavonoids.	
13.	<b>Text book(s):</b> 1. Finar I L, <i>Organic Chemistry, Vol I and Vol II</i> , Pearson Education India (2002). 2. Sykes P, <i>A Guidebook to Mechanism in Organic Chemistry</i> , Pearson Education (2013).	
14.	<b>Reference(s):</b> 1. Brahmachari G, <i>Organic Name Reactions: A Unified Approach</i> , Alpha Science International Ltd (2006). 2. Carey F A and Sundberg R J, <i>Advanced Organic Chemistry, Part A : Structure and Mechanisms</i> , Springer (2008). 3. Clayden J, Greeves N and Warren S, <i>Organic Chemistry</i> , Oxford University Press (2014). 4. Solomons T W G, Fryhle C B and Snyder S A, <i>Solomons Organic Chemistry</i> , Wiley (2017).	