

BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI - Hyderabad Campus
INSTRUCTION DIVISION
First SEMESTER 2019-2020
Course Handout (Part II)

Date: 02/08/2019

In addition to part I (general handout for all courses appended to the timetable) this portion gives specific details regarding the course.

Course No. : CHEM G551
Course Title : Advanced Organic Chemistry
Instructor-In-Charge : Tanmay Chatterjee

1. Course Description:

This course deals with various organic reactions viz., aromatic electrophilic and nucleophilic substitution reactions, nucleophilic addition reactions, oxidation and reduction reactions, enolates in organic synthesis, retrosynthetic analysis and multistep synthesis, protecting groups.

2. Scope and objective of the course:

The aim of this course is to give the students an overall view of the dynamics of organic chemistry, such as reaction mechanisms, retrosynthetic analysis, and chemo-, regio- and stereoselectivity. This course also provides students a firm understanding of basic reactions of various organic compounds and the effect of structure on reactivity.

3. Text Book:

TB1: Michael B. Smith & Jerry March, Advanced Organic Chemistry, John Wiley & Sons, 6th ed., 2012.

TB2: Stuart Warren: Organic Synthesis: The Disconnection Approach: John Wiley & Sons, 2004.

Reference Books:

- (1) Paul Wyatt & Stuart Warren, Organic Synthesis: Strategy and Control, Wiley (2008).
- (2) Morrison and Boyd, Organic Chemistry, Prentice & Hall, 6th ed., 1992.
- (3) J. Clayden, N. Greeves, S. Warren, P. Wothers, Organic Chemistry, Oxford Univ. Press (Second South Asia Edition, 2012).

4. Course Plan:

Lect. No.	Learning Objectives	Topic(s) to be Covered	Chap(s). No(s).
1-5	Mechanisms, orientation, reactivity and reactions	Aromatic electrophilic substitution	TB1: Ch. 11
6-11	Mechanisms (S_N1 , Benzyne), reactivity and reactions	Aromatic nucleophilic substitution	TB1: Ch. 13
12-19	Mechanisms, orientation, reactivity and reactions	Nucleophilic addition reactions to carbon-carbon multiple and carbon-heteroatom multiple bonds.	TB1: Ch. 15 & 16
20-27	Mechanism of oxidation and reduction reactions in organic chemistry	Oxidation and reduction reactions	TB1: Ch. 19
27-36	Retrosynthetic analysis by disconnection approach.	Retrosynthetic analysis and protecting groups	TB2: Ch. 1-8, Ch. 9
37-42	Application of various types of enolates in organic synthesis and multistep synthesis	Enolates in organic synthesis and multistep synthesis	R1 : Ch. 2

5. Evaluation scheme:

Component	Duration	Weightage	Date	Time	Remarks
Mid term Test	90 min.	25			Closed book
Seminars*	15 min	40	Continuous		Open book
Compre. Exam.	3 hrs.	35			Closed Book

* There will be **two seminars (one before Mid term/ One before compre)** on some advanced research topics.

6. Chamber consultancy hour: Tuesday 10:00 to 11:00 am.

7. Notices: Notices concerning the course will be displayed on the Chemistry Group notice board and/or CMS.

8. Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

9. Make-up Policy: Make-up(s) will be granted only for genuine reasons according to BITS guidelines.

Instructor-in-charge
CHEM G551