



**INSTRUCTION DIVISION**  
**Second Semester 2015-2016**  
**Course Handout (Part II)**

Date: 09-01-2016

In addition to part I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

**Course No. : PHA F416**

**Course Title : Chemistry of Synthetic Drugs**

**Instructor-in-Charge : Dr. S. Murugesan**

**1. Course Description:**

Methods of heterocyclic drug synthesis; Mechanism of important heterocyclic drug formation; Study on Five to Seven-membered heterocyclic compound synthesis; Fused compound synthesis; Biological properties of heterocyclic drugs. Named reactions of respective nucleus will be discussed in brief throughout the course.

**2. Text Book:**

- Daniel Lednicer –“Strategies for Organic Drug Synthesis and design”, John Wiley & sons.

**3. Reference books:**

- “Heterocyclic Chemistry” J. A. Joule and K. Mills, Blackwell publishing. 4<sup>th</sup> Edition.
- "Heterocyclic Chemistry" R.R. Gupta, M. Kumar, V. Guta, Springer (India) Pvt, Ltd.

**4. Course Plan:**

Lec. No.	Learning Objectives	Topic to be covered	Reference/ Chap./Sec.
1-4	Overview of Organic Drug Synthesis	Introduction to heterocyclic chemistry, nomenclature, organic drugs, synthesis and processes involved	Various sources
5-10	Drugs based on Five-Membered heterocycles	Furan, Pyrrole, Thiophene Oxazole, Isoxazole, Imidazole, Pyrazole, Thiazole, Isothiazole	TB-8
11-17	Drugs based on Six-membered heterocycles	Pyridine, Piperidine, Pyridazine, Pyrimidine, Pyrazine, Piperazine	TB-9
18-21	Five-membered heterocycles fused to a benzene ring	Indole, Benzimidazole, Benzothiazole and benzofuran	TB-10





22-26	Six-membered heterocycles fused to a benzene ring	Quinoline, Isoquinoline, Coumarin, Bezopyran, Benzodioxan, Quinoxaline	TB-11
27-30	Seven-membered heterocycles fused to a benzene ring	Benzodiazepine, Benzothiazepine, Triazolobenzodiazepine	TB-12
31-35	Heterocycles fused to two benzene rings	Dibenzoxepine, Dibenzopyran, Dibenzodiazepine	TB-13
36-40	Heterocycles fused to other heterocyclic rings	Purines and Pyrimidines	TB-15

**5. Evaluation Scheme:**

Component	Duration	Weightage (%)	Date & Time	Remarks
Mid-semester Exam	90 Min	30	-	CB
Continuous Assessment*		30		CB / OB
Comprehensive Exam	180 Min	40	13/5 FN	CB

\* Continuous assessment Topics and number will be announced in class. It will be in terms of Viva-voce, Tutorials, Home assignments and Quizzes etc.

**6. Attendance:** Regularity in attendance will be one of the criteria in deciding the borderline cases at the time of final grading as well as make-up's.

**7. Grading Procedure:**

1. It is not necessary that all the grades (i.e. A to E) would be awarded.
2. In borderline cases subjective judgment will be exercised for pull-up's (max. 2%). Basic guiding factors will be regularity, consistency in performance (above average) or/and steady improvement throughout the semester.

**8. Make-up:** Generally make-up's are not given as a routine. It is solely dependent on the "genuineness" of the circumstance under which a student fails to appear in a scheduled evaluation component. However, the make-up application should be personally given to Instructor-in-Charge and not slipped into the chamber of the Instructor-in-Charge. It is expected that students shall avoid misuse of this feature.

**9. Chamber consultation hours:** To be announced in the class.

**10. Notices:** Notices pertaining to this course will be displayed only on Pharmacy Group Notice board.

Instructor-in-Charge  
PHA F416

