SECOND SEMESTER 2015 -2016

Course Handout

Date: 15/01/2016

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 F241**
Course Title : **Pharmaceutical Chemistry**
Instructor-in-charge : **HEMANT R. JADHAV**
Instructor : **Mahaveer Singh, Sourabh Mundra, SNC Sridhar**

1. **Scope and Objective of the Course**:
This course deals with study of important classes of organic compounds. It provides students a basic idea about reactions of these compounds and mechanisms for these reactions. This course also emphasizes the uses of inorganic compounds in pharmacy. This course also covers some important heterocycles (five and six member) with their reactions.

2. Text Book: L. G. Wade and Maya Shankar Singh, Organic Chemistry, Pearson, 6th Edition.

3. Reference Books:

1. R T Morrison and R N Boyd Organic Chemistry PHI, 6Th Edition
2. T W Grahm Soloman and Craig B Fryhle , Organic Chemistry, 8th Edition, John Wiley and Sons, New York , 2004.
3. Advanced Organic Chemistry, Reactions Mechanism and Structure. Fourth Edition, John Willey and Sons. New York ,2004.
4. Inorganic Pharmaceutical Chemistry by Dr. K. G. Bothara, Pragati Books.

4. Course Plan :

Lecture No	Topic	Learning Objectives	Text
1 – 3	Naming of organic compounds and some important reactions	Systematic nomenclature, General principles, saturated branched and unbranched chain, alkene, alkyne, carbonyl, carboxylic acid, halogens, amines etc.	TB 1.10A-1.10H
4-6	Chemistry of alcohols	Structure and classification, general synthesis and various reactions	TB 10.1,10.2,10.6,10.12
7-9	Chemistry of ethers	complexes of ethers, reagents, crown ethers, synthesis and cleavage, auto oxidation,	TB 13.1,13.2,13.5
10–15	Chemistry of ketones and aldehydes	Structure and physical properties, synthesis and various reactions	TB 16.1,2,4,7,12,14,16,21
16-19	Chemistry of amines	Structure, preparation and reactions of nitro, nitrile, azide, amide, imine. Rearrangements and reactions involving above	TB 17.3,5,6,13,15,20,22
20-24	Chemistry of carboxylic acid and its derivatives	Structure, synthesis and reactions of carboxylic acids.malonic ester	TB 19.9,15,20.1,5,9,10-20.

25-27	Condensation and alpha substitution of carbonyl compounds	Keto enol tautomerism, Claisen condentation, malonic ester synthesis, Cross claisen, Michael addition	TB 21.2,21.12-21.19
28-29	Free radical reactions	Structure, generation and fate of free radicals, and free radical substitution reactions.	RB:3- unit 5 ,14
30-34	Heterocyclic compounds	Introduction to five and six membered heterocyclic ring systems	RB 3
35-40	Inorganic compound in pharmacy	Chemistry, properties and uses of various inorganic compounds used in therapeutics and as pharmaceutical aids such as Gastrointestinal agents Acidifying agents, antacids, protective and absorbents, saline cathartics), Radiopharmaceutical used in medicine (therapeutic application of isotopes, diagnostic application of isotopes), Topical agents (Antimicrobials and astringents), Dental products (Anticaries agents and dentifrices), Miscellaneous Inorganic Pharmaceutical agents (Inhalants; respiratory stimulants, expectorants and emetics, antidotes)	RB:4

Component	Duration	Weightage (%)	Date & Time	Remarks
Mid-sem Test	90 min	30	16/3 9:00 - 10:30 AM	CB
Continuous assessment		40	Continuous	
Comprehensive Exam	120 min	30	7/5 FN	CB and OB

*Continuous assessment will be based on theory covered in the class. Topics and number will be announced in class. It will be in terms of tutorials, projects, laboratory, viva-voce, class participation

Attendance: Although attendance is not compulsory, regularity in theory and practical classes will be decisive factor during grading, especially in borderline cases.
Chamber Consultation Hour: To be announced in the class.
Make-up policy: Generally make-up will be considered for regular students only.
Notices: Concerning this course will be displayed on Pharmacy N. B.

Instructor-in-Charge