BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
INSTRUCTION DIVISION
SECOND SEMESTER 2020-2021
Course Handout (Part - II)

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 F342**
Course Title	**: Medicinal Chemistry II**
Instructor-in-Charge	**: R. Mahesh**
Instructors	**: As in timetable**

1. Scope and Objective of the Course:

This course deals with the study of important classes of drugs that are listed below. Various aspects like structure, properties, therapeutic and pharmaceutical importance and the uses of drug molecules both of natural and synthetic origin will be covered. Study of physico-chemical properties, mechanism of action, S.A.R. and metabolism of drugs dealt hereunder will also be emphasized. Special emphasis will be given on important topics such as Anti hypertensive drugs, Drugs affecting sugar metabolism, Antimalarial drugs, Anticancer agents, Antiviral agents etc.

2. Text Book :

William O Foye- “Principles of Medicinal Chemistry", VI Edition, Lea and Febiger, Phil., 2008. (Seventh edition 2013, is also available).

3. Reference Books :

1. Robert F Doerge-" Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry", XII Edition, Lippincot William and Wilkinson, South Asian Edition, 2010
2. Remington’s Pharmaceutical Sciences, 22nd., 2012.
3. Introduction to medicinal chemistry by Graham L Patrick. Fourth edition, Oxford University press. 2008 .
4. Vogel’s text book of Practical Organic Chemistry, V edition, Longman Scientific Publications, 1989

***Most of the earlier editions of the above books are available in free downloadable form .

4. Course Plan

Lec. No.	Topics to be covered	Learning Objectives	Ref.
1-3	New drug design and development	Principles and methodology	TB, other sources
4-9	Anti hypertensive drugs	Adrenergic drugs, diuretics, calcium channel blockers, ACE inhibitors and others, structure, synthesis and SAR	TB-21,other sources
10-12	Coagulants, anticoagulants, anti platelet agents	Mode of Action, Syntheses, SAR.	TB-20
13-15	Hypo-lipidemic drugs	Mode of Action, Syntheses, SAR	TB-24
16-18	Drugs affecting sugar metabolism – (anti-diabetic drugs)	Mode of Action, Syntheses, SAR.	TB-26
19-23	Antibiotics and other antimicrobial agents	Mode of Action, Syntheses, SAR.	TB-34
24-27	Antimalarial drugs	Mode of Action, Syntheses, SAR	TB-32
28-30	Antiseptics, disinfectants	Mode of Action, Syntheses, SAR	TB-36
31-34	Antiviral and Anticancer agents	Mode of Action, Syntheses, SAR	TB-37
35-36	Introduction to Principles of toxicology	Basic principles, impact on drug design	TB. Other sources
37 →	Buffer lecture hours-Few topics may spill over from plan based on discussions, conduct of quiz, etc.		

Practicum experience:

Experiments	No of practical hours	References/ chapters
Synthesis of various medicinal compounds, introduction to molecular modelling , design	As in timetable	Different chapters of text book/ practical book

5. Evaluation:

Component	Duration	Weightage (%)	Date & Time	Remarks
Mid. Sem. Test $$$	90 min.	30	As in timetable	Closed Book
Continuous Assessment including Practicum experience*	--	35	continuous	---
Compre. Exam	120 min.	35	As in timetable	Closed Book and or Open Book

$$$ Mid Sem. test may be replaced by quizzes and or class test(s).

* Continuous assessment may include quiz(zes)#, Practicum experience** Laboratory - Day to Day work and quiz(zes), Viva-Voce, Home assignment, and Lab. component including Lab. Compre., etc.

** Practicum experience, Assignment(s) may be practical / theory oriented, for which a proper documentation and submission of records and reports in a standard format should be submitted as per deadline(s) that would be announced. It may also include a viva and or seminar presentation(s).

$ It is strongly advised that all students prepare their own class notes and relevant information from text, reference material, as in handouts would only be allowed for consultation during assessments of open book/notes. Photocopies of any material, written or printed will not be permitted. Stapled sheets , loose sheets of information written or printed, photocopies of slides used for discussion in class will not be allowed.

*Slides used during class hours provide key information for which additional supportive information is expected to be collected from sources aforementioned. These slides will not be shared and hence students are requested/advised to make their own notes during class hour. Recent developments in the area/topic will be discussed in class based on their significance to healthcare delivery and hence some information on therapeutic benefits and toxicity effects, besides others, may differ from the information in text, reference material and hence students are expected to take note of such key discussions during contact hours. Such discussions held in class will be considered as primary source of information in assessments. Also note that all classes will be held (online/in person) as announced by AUGRD/AUGSD, from time to time and students are requested to note the same.

***** Practicum experience (Lab. component)**,** Assignment(s) may be practical / theory oriented, for which a proper report in a standard format should be submitted as per deadline(s) that would be announced. It may also include a viva and or seminar presentation(s).

Quiz(zes) may/will be conducted as a part of evaluation component, at random, during contact hours including lecture, tutorial hours, as convenient, with/without prior intimation and sometimes outside class contact hours (for both theory and practical) and hence it is expected that the students come prepared to every class on topics covered in earlier contact hours. Regular classes will be held in designated tutorial hour to maintain continuity. Students are also requested to refresh their **knowledge in basic organic reactions and in topics and concepts covered in the course Medicinal Chemistry -I.**

6. Mid-Sem. Grading would be done once at least 30-40 % evaluation components are completed.

7. For all evaluation components, information given during classroom instruction, aforementioned text books and reference books in the same order, will be considered as

correct. Students are advised to follow the text, reference material as given in hand-out. All evaluation components are equally important, irrespective of weightage. Hence, students failing to attend scheduled classes, or absenting themselves in one or many of the evaluation components, may become ineligible for obtaining a valid grade at the end of the semester. Attendance in lectures, tutorials and practicum experience are all equally important as they are all integral components of learning, irrespective of weightage and may be taken into consideration, during grading.

Hence, students are strongly advised to keep away from absenting themselves from all aforementioned contact sessions. Clearing the course would require adequate performance in written quizzes, tests**, examinations**, and in practicum experience components, separately (i.e. procuring low marks in evaluation components, aforementioned**, other than practicum experience, would not suffice, to clear the course).**

8. Any other adaptive changes in the handout, will be announced in class, if any.

9. **Reading Assignments:** Students are advised to read, collect additional information on the above mentioned topics as per given schedule.

10. **Chamber consultation hours**: Room No: **3170-S**; 01596515207; time to be announced in class.

11. **Notices**: Notices concerning the course will be displayed on the Pharmacy Department notice board only.

12. **Make-Ups**: Make-Ups are not given as a routine. It is solely dependent upon the GENUINENESS OF THE CIRCUMSTANCES under which a student fails to appear in a scheduled evaluation component. In such circumstances, prior permission should be obtained from the Instructor-in-Charge. In no case the make-up letter be slipped inside the chamber of the Instructor-In-Charge. The decision of the Instructor- in-Charge will be final.

Instructor - in -Charge
PHA F342