



BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI
Pilani Campus

INSTRUCTION DIVISION
SECOND SEMESTER 2020-2021
Course Handout (Part - II- B)

Date: 16th January, 2021

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 G614
Course Title : CLINICAL PHARMACY AND THERAPEUTICS
Instructor-in-Charge : R.MAHESH
Practicum Experience/ Assignment* : To be announced

1. Scope and Objective of the Course :

This course is designed to enlighten the students in the field of clinical pharmacy, an emerging area in therapeutics. Basic concepts of clinical pharmacy and its applications, pharmacokinetics, laboratory data analysis, drug interactions and adverse drug reactions, therapeutic drug monitoring, development of drug information systems will be covered. Emphasis will also be made on health care management.

2. Text Books (TB):

- (i) Walker, Roger & C. Whittlesea Clinical Pharmacy & Therapeutics, Churchill Livingstone, 4th ed., 2007
- (ii) Helms, Richard A & Eric T. Herfindal Textbook of Therapeutics Lippincott, 8th ed., 2006

3. Reference Books (RB):

- a) Nick Barber and Alan Willson-"Churchill's Clinical Pharmacy Survival Guide"- Churchill Livingstone, I Ed., 1999
- b) Karen J. Tietze-"Clinical skills for Pharmacists- A patient focused approach"-Mosby, Inc., I Ed., 1997
- c) Gopal B Saha-"Fundamentals of Nuclear Pharmacy"-Springer-Verlag, Inc., IV Ed., 1997
- d) Robert G Petersdorf, et al.,-"Harrison's Principles of Internal Medicine"- McGraw-Hill International Book Co., X Ed., 1985.
- e) Richard Ravel-"Clinical Laboratory Medicine"-Mosby, Inc., VI Ed., 1995

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4. Course Plan:

Learning objectives*	Topic	Lectures	Book(s) for Reference
<u>Policy:</u>			
	Practice of clinical pharmacy	1-3	TB b -1; RBa-1-4; RB b -1,3,10
	Clinical trial design	4-6	RBa-5; RBe-1;35,36
	Pharmaco-economics	7-9	TBa-8; RBa-7
<u>Choice of Drugs:</u>			
	OTC prescribing	10,11	TBa-2; RBa-8
	Pain - types and drugs of choice	12,13	TBa-33; TB b -64; RBa-9
	Anti-infectives	14,15	TBa-35-42; TB b -section 72-91; RBa-10
	Parenteral nutrition	16,17	TBa-7; TB b -28-30; RBa-12
<u>Monitoring:</u>			
	Neonates, Paediatrics, Geriatrics	18-22	TBa-9-11; TB b -6,15-16
	Clinical Pharmacokinetics	self study -	TBa-24, TB b -1
	Drug interactions	23,24	TBa-4; TB b -3
	Adverse Drug Reactions	25-27	TBa-5; TB b - 2; RBa-16
	Laboratory data analysis	28,29	TBa-6; TB b -5; RB b -5; RBe-1
	Prescription monitoring	30-32	TBa-2; RBa-13,17-20; RB b -8
	Patient-case presentation	33-34	TB b -8; RB b -3,4,6
	<u>Therapeutics: –</u>		
	Planning in various disorders	35 onwards	TB b -12-58; TB b -9-103; RB b -7; RBe-2-33
			(selected topics will be discussed in class and others covered through case studies, practicum experience)
<u>Clinical Applications of Radio-Pharmaceuticals</u>			
		self reading	RBc-3,6,7,13-15; RBe-36

<u>Learning objectives*</u>			
<u>Policy:</u>			
	Background, ethics, methods of Phase I, II, III clinical trials, design and analysis, economic prescribing are discussed.		
<u>Choice of Drugs:</u>			
	The use of over-the-counter drugs, their management, detection of symptoms, use of anti-microbial drugs, parenteral nutrition and maintenance, - their drug induced alterations, etc. are emphasized.		
<u>Monitoring:</u>			
	Significance of drug dose calculations in different age groups, assessment of physical functions, drug-drug and drug-food interactions, patient case presentations, therapeutic drug monitoring of potent drugs are covered. These topics will be covered through case studies and studies on patient case presentations, prescription data analysis, following discussion of concepts in class, separately through the practicum experience as discussed below.		
<u>Clinical Applications of Radio-Pharmaceuticals :</u>			
	Radio-active - tracers / chemicals / pharmaceuticals used as diagnostics and for treatment, their applications in pharmacy.		



The Assignment(s) / Practicum experience will be case study, survey based study or situation based study on either some or all of the below mentioned topics mostly covering various aspects of therapeutics. Students may have to collect material from various sources for the same. Details will be intimated through a separate notification or in class.

Assignment(s)* / Practicum experience* (Ref: TBa, TBb, RBb): learning skills

Practice of Clinical Pharmacy and ethics	Taking medication histories
Physical assessment skills	Review of laboratory and diagnostic tests
IV drug administration and dosing calculations	Patient case presentation
Therapeutic planning	Monitoring drug therapies
Researching and providing drug information (DIS)	Health care management

5. Evaluation :

COMPONENT	WEIGHTAGE	DURATION	DATE & TIME	REMARKS
1. Test – I/Mid.Sem.Test*	30	90 min.	as in timetable	CLOSED BOOK
3. Assignment(s)*/ Practicum experience*	40		continuous	-----
4. Compre. Exam.*	30	120 min.	as in timetable	partly CLOSED and /or OPEN BOOK

MID.- SEM. grading will be done whenever about 30 40 % of the evaluation components are completed.

NOTE :

- * Case studies, interpretation of data and their analysis, will form a part of all evaluation components. Assignments(s) may include seminar presentation and viva.
- * Continuous assessment may include quiz(zes) viva-voce, case studies and or analysis, home assignments, clinical data interpretations, etc.
- * *Practicum experience and or Assignment(s) may be practical / theory oriented for which type-written report in a standard format should be submitted as per deadline(s) that would be announced, therein. It may also include a viva and or a seminar presentation. However all assignments/reports (final, complied) should be completed and submitted by **last week of classwork**. It is necessary that all students **stick to time schedule and DO NOT postpone submission** of assignments/reports so as to prevent extra load during last two weeks of class work. Study reports are to be submitted on immediate completion of analysis, as instructed.
- * It is strongly advised that all students prepare their own class notes and relevant information from text, reference material, as in handout, 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, if any, used during class hours provide key information for which additional supportive information is expected to be collected from sources aforementioned. These slides may 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.
- * 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 practicum experience) and hence it is expected that the students come prepared to every class on topics covered in earlier contact hours. Students are also requested to refresh their **knowledge in anatomy, physiology and pharmacology**.

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).

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

6. Reading Assignments :

Students are advised to read, collect additional information on the above mentioned topics as per given schedule. Revision of basic principles of anatomy, physiology and pharmacology including medicinal chemistry is necessary for case study related analysis and interpretation.

7. Chamber consultation hours : (3170-S) ; 01596-515207; To be announced in class.

8. Notices : Notices concerning the course will be displayed on the Pha. Group N.B. only.

9. Make-Ups :

Make-Ups are not given as a routine. It is solely dependant 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 APPLICATION BE SLIPPED INSIDE THE CHAMBER OF THE INSTRUCTOR-IN-CHARGE. The decision of the Instructor-in-Charge in the above matter will be final.

**Instructor - in -Charge
PHA G614**