

# LESSON PLAN

## HOSPITAL AND CLINICAL PHARMACY – THEORY

**Course Code:** ER20-25T      **75 Hours +25 Hour Tutorial (4 Hours/week)**

**Name of Tutor/Teacher:** Mohd Hamid (Theory)

**Schedule of Classes: Theory:** Tuesday: 09.00 – 10.00 AM, Wednesday: 04.00-5.00 PM, Friday: 11.00-12.00 PM, Thursday: 3.00 to 4.00 PM (Tutorial)

**Scope:** This course is designed to impart fundamental knowledge and professional skills required for facilitating various hospital and clinical pharmacy services.

**Course Objectives:** This course will discuss and train the students in the following

1. Hospital and Hospital Pharmacy organization and set-ups
2. Basics of hospital pharmacy services including the procurement, supply chain, storage of medicines and medical supplies
3. Basics of clinical pharmacy including introduction to comprehensive pharmaceutical care services
4. Basic interpretations of common laboratory results used in clinical diagnosis towards optimizing the drug therapy

**Course Outcomes:** Upon successful completion of this course, the students will be able to

**CO1.2T.1.** Explain about the basic concepts of hospital pharmacy administration

**CO1.2T.2.** Manage the supply chain and distribution of medicines within the hospital settings

**CO1.2T.3.** Assist the other healthcare providers in monitoring drug therapy and address drug related problems

**CO1.2T.4.** Interpret common lab investigation reports for optimizing drug therapy

Chapter	Topic	Date	Hour	CO	PO	Coverage	Reason for discrepancy	Plans for compensation in backlog	Taught by	Verified by
1	<b>Hospital Pharmacy</b>									
	Definition, scope, national and international scenario		1							
	Organizational structure		2							
	Professional responsibilities, Qualification and experience requirements, job specifications, work load requirements and inter professional relationships		3							
	Good Pharmacy Practice (GPP) in hospital		4							
	Hospital Pharmacy Standards (FIP Basel Statements, AHSP)		5							
	Introduction to NAQS guidelines and NABH Accreditation and Role of Pharmacists		6							
2	<b>Different Committees in the Hospital</b>									
	Pharmacy and Therapeutics Committee - Objectives, Composition, and functions		1							
	Hospital Formulary - Definition, procedure for development and use of hospital formulary		2,3							
	Infection Control Committee – Role of Pharmacist in preventing Antimicrobial Resistance		4							
	Inflammatory Bowel Diseases (Ulcerative Colitis)		7							
3	<b>Supply Chain and Inventory Control</b>									
	Preparation of Drug lists - High Risk drugs, Emergency drugs, Schedule H1 drugs, NDPS drugs, reserved antibiotics		1,2							
	Procedures of Drug Purchases – Drug selection, short term, long term, and tender/e-tender process, quotations,		3,4							
	Inventory control techniques: Economic Order Quantity, Reorder Quantity Level, Inventory Turnover etc.		5,6							
	Inventory Management of Central Drug Store – Storage conditions, Methods of storage,		7,8							

	Distribution, Maintaining Cold Chain, Devices used for cold storage (Refrigerator, ILR, Walk-in-Cold rooms)								
	FEFO, FIFO methods		9,10						
	Expiry drug removal and handling, and disposal. Disposal of Narcotics, cytotoxic drugs		11,12						
	Documentation - purchase and inventory		13,14						
	<b>Drug distribution</b>								
	Drug distribution (in- patients and out - patients) - Definition		1						
	Advantages and disadvantages of individual prescription order method, Floor Stock Method, Unit Dose Drug Distribution Method, Drug Basket Method.		2,3						
	Distribution of drugs to ICCU/ICU/NICU/Emergency wards.		4						
	Automated drug dispensing systems and devices		5						
	Distribution of Narcotic and Psychotropic substances and their storage		6,7						
	<b>Compounding in Hospitals., Total parenteral nutrition</b>		1						
	Bulk compounding, IV admixture services and incompatibilities		2,3						
	Total parenteral nutrition		4						
	<b>Radio Pharmaceuticals</b> - Storage and dispensing of radiopharmaceuticals		1						
	Disposal of radiopharmaceuticals		2						
	<b>Application of computers in Hospital Pharmacy</b> Practice, Electronic health records,		1						
	Software's used in hospital pharmacy		2						
	<b>Clinical Pharmacy</b>								
	Definition, scope, and development - in India and other countries		1						
	Technical definitions		2						

Common terminologies used in clinical settings	3								
Definition, goal, and procedure of Ward round participation	4,5								
Treatment Chart Review	6								
Adverse drug reaction monitoring	7								
Drug information and poisons information	8								
Medication history	10								
Patient counselling	11								
Interprofessional collaboration	12								
<b>Clinical laboratory tests used in the evaluation of disease states - significance and interpretation of test results</b>	1,2								
Hematological, Liver function	3,4								
Renal function, thyroid function tests	5,6								
Fluid and electrolyte balance	7,8								
Pulmonary Function Tests	9,10								
<b>Poisoning: Types of poisoning: Clinical manifestations and Antidotes</b>									
Definition, Types of poisoning	1								
Clinical manifestations and Antidotes	2,3								
<b>Drugs and Poison Information Centre and their services</b>									
Definition, Requirements	4								
Information resources with examples	5								
Advantages and disadvantages	6								

<b>Pharmacovigilance</b>									
Definition, aim and scope		1							
Overview of Pharmacovigilance		2							
<b>Medication errors</b>									
Definition and types		1							
Consequences, and strategies to minimize medication errors		2,3							
LASA drugs		4							
Tallman lettering as per ISMP		5							
Drug Interactions: Definition, types, clinical significance of drug interactions		6							

## HOSPITAL AND CLINICAL PHARMACY – PRACTICAL

**Course Code: ER20-25P**

**25 Hours (1 Hour/week)**

**Name of Tutor/Teacher: Sh. Dalbir Singh Senior Lecturer in Pharmacy**

### **Schedule of Classes:**

**Practical: *Batch A*: Wednesday (11.00 – 12.00 PM)**

**Practical: *Batch B*: Thursday (11.00 – 12.00 PM)**

**Practical: *Batch C*: Monday (11.00 – 12.00 PM)**

**Scope:** This course is designed to train the students to assist other healthcare providers in the basic services of hospital and clinical pharmacy.

**Course Objectives:** This course will train the students with hands-on experiences, simulated clinical case studies in the following:

1. Methods to systematically approach and respond to drug information queries
2. How to interpret common laboratory reports to understand the need for optimizing dosage regimens
3. How to report suspected adverse drug reactions to the concerned authorities
4. Uses and methods of handling various medical/surgical aids and devices
5. How to interpret drug-drug interactions in the treatment of common diseases.

**Course Outcomes:** Upon successful completion of this course, the students will be able to

**CO1.2P.1.** Professionally handle and answer the drug information queries

**CO1.2P.2.** Interpret the common laboratory reports

**CO1.2P.3** Report suspected adverse drug reactions using standard procedures

**CO1.2P.4** Understand the uses and methods of handling various medical/surgical aids and devices

**CO1.2P.5** Interpret and report the drug-drug interactions in common diseases for optimizing the drug therapy

Exp. No.	Experiment	Batch	Date	CO	PO	Coverage	Reason for discrepancy	Plans for compensation in backlog	Taught by	Verified by
1	Systematic approach to drug information queries using primary / secondary / tertiary resources of information (1 case)	A								
		B								
		C								
2	Systematic approach to drug information queries using primary / secondary / tertiary resources of information (2 case)	A								
		B								
		C								
3	interpretation of laboratory reports to optimize the drug therapy in a given clinical case (1 case)	A								
		B								
		C								
4	interpretation of laboratory reports to optimize the drug therapy in a given clinical case (2 case)	A								
		B								
		C								
5	Filling up IPC's ADR Reporting Form and perform causality assessments using various scales (1 case)	A								
		B								
		C								
6	Filling up IPC's ADR Reporting Form and perform causality assessments using various scales (2 case)	A								
		B								
		C								
7	Demonstration / simulated / hands-on experience on the identification, types, use / application /administration of Orthopedic and Surgical Aids such as knee cap, LS belts, abdominal belt, walker, walking sticks, etc.	A								
		B								
		C								
8	Demonstration / simulated / hands-on experience on the identification, types, use / application /administration of different types of bandages such as sterile gauze, cotton, crepe bandages,	A								
		B								
		C								
9	Demonstration / simulated / hands-on experience on the identification, types, use / application /administration of Needles, syringes, catheters, IV set, urine bag, RYLE's tube, urine pots, colostomy bags, oxygen masks, etc.	A								
		B								
		C								
10	Case studies on drug-drug interactions (1	A								
		B								

	case)	C								
11	Case studies on drug-drug interactions (2 case)	A								
		B								
		C								
12	Wound dressing (simulated cases and role play-1 case)	A								
		B								
		C								
13	Wound dressing (simulated cases and role play -2 case)	A								
		B								
		C								
15	Vaccination and injection techniques (IV, IM, SC) using mannequins (1 activity)	A								
		B								
		C								
16	Vaccination and injection techniques (IV, IM, SC) using mannequins (2 activity)	A								
		B								
		C								
17	Vaccination and injection techniques (IV, IM, SC) using mannequins (3 activity)	A								
		B								
		C								
18	Vaccination and injection techniques (IV, IM, SC) using mannequins (4 activity)	A								
		B								
		C								
19	Vaccination and injection techniques (IV, IM, SC) using mannequins (5 activity)	A								
		B								
		C								
20	Use of Hospital Pharmacy Software	A								
		B								
		C								
21	Use of Hospital Pharmacy Software	A								
		B								
		C								
22	Use of various digital health tools	A								
		B								
		C								



## SUGGESTED READINGS

- A Textbook of Clinical Pharmacy Practice - Essential concepts and skills - Parthasarathi G, Karin Nyfort-Hansen and Milap Nahata. Orient Longman Pvt. Ltd. Hyderabad.
- Text Book of Hospital and Clinical Pharmacy by Dr. Pratibha Nand and Dr. Roop K Khar, Birla publications, New Delhi.
- Gupta B.K and Gupta R.N., GPP in Hospital Pharmacy, Vallabh Prakashan.
- Basic skills in interpreting laboratory data - Scott LT, American Society of Health System Pharmacists Inc.
- Australian drug information- Procedure manual. The Society of Hospital Pharmacists of Australia.