



**MAA OMWATI INSTITUTE OF
PHARMACY DEPARTMENT OF
PHARMACY
Course: Diploma in Pharmacy**

LESSON PLAN

Faculty Name: Ms. Jyoti

Subject: Pharmacology

Class: D. Pharmacy 2nd Year

Subject Code: ER20-22T

Scope: This course provides basic knowledge about different classes of drugs available for the pharmacotherapy of common diseases. The indications for use, dosage regimen, routes of administration, pharmacokinetics, pharmacodynamics, and contraindications of the drugs discussed in this course are vital for successful professional practice.

Course Objectives: This course will discuss the following:

1. General concepts of pharmacology including pharmacokinetics, pharmacodynamics, routes of administration, etc.
2. Pharmacological classification and indications of drugs
3. Dosage regimen, mechanisms of action, contraindications of drugs
4. Common adverse effects of drugs

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

1. Describe the basic concepts of pharmacokinetics and pharmacodynamics
2. Enlist the various classes and drugs of choices for any given disease condition
3. Advise the dosage regimen, route of administration and contraindications for a given drug
4. Describe the common adverse drug reactions

Number of Lectures: 75

Each Lect. Time : 01 hour

Lecture	Topic	Remark/ Date
Unit 1	General Pharmacology (10 hrs)	
1	Introduction and scope of Pharmacology	01 hr
2	Various routes of drug administration – advantages and disadvantages	01 hr
3	Drug absorption – definition, types, factors affecting drug absorption	01 hr
4	Bioavailability	01 hr
5	Factors affecting bioavailability	01 hr

6	Drug distribution – definition, factors affecting drug distribution	01 hr
7	Biotransformation of drugs – Definition	01 hr
8	Types of biotransformation reactions, factors influencing drug metabolisms	01 hr
9	Excretion of drugs – Definition, routes of drug excretion	01 hr
10	General mechanisms of drug action and factors modifying drug action	01 hr
Unit 2	Drugs Acting on the Peripheral Nervous System (11 hrs)	
11	Steps involved in neurohumoral transmission ¹	01 hr
12	Definition, classification, pharmacological actions, dose, indications, and contraindications of Cholinergic drugs	01 hr
13	Anticholinergic drugs	01 hr
14	Adrenergic drugs	01 hr
15	Adrenergic drugs	01 hr
16	Anti-adrenergic drugs	01 hr
17	Neuromuscular blocking agents	01 hr
18	Drugs used in Myasthenia gravis	01 hr
19	Local anaesthetic agents	01 hr
20	Non-Steroidal Anti-Inflammatory drugs (NSAID's)	01 hr
21	Non-Steroidal Anti-Inflammatory drugs (NSAID's)	01 hr
Unit 3	Drugs Acting on the Eye (2 hrs)	
22	Definition, classification, pharmacological actions, dose, indications and contraindications of Miotics Mydriatics	01 hr
23	Drugs used in Glaucoma	01 hr
Unit 4	Drugs Acting on the Central Nervous System (8 hrs)	
24	Definition, classification, pharmacological actions, dose, indications, and contraindications of General Anesthetics	01 hr
25	Hypnotics and sedatives	01 hr

26	Anti-Convulsant drugs	01 hr
27	Anti-anxiety drugs	01 hr
28	Anti-depressant drugs	01 hr
29	Anti-psychotics	01 hr
30	Nootropic agents	01 hr
31	Revision	01 hr
Unit 5	Drugs Acting on the Cardiovascular System (6hrs)	
32	Definition, classification, pharmacological actions, dose, Indications & contraindications of Anti-hypertensive drugs	01 hr
33	Anti-anginal drugs	01 hr
34	Anti-arrhythmic drugs	01 hr
35	Drugs used in atherosclerosis	01 hr
36	Drugs used in Congestive heart failure	01 hr
37	Drug therapy for shock	01 hr
CLASS TEST		
Unit 6	Drugs Acting on Blood and Blood Forming Organs (4 hrs)	
38	Definition, classification, pharmacological actions, dose, indications, and contraindications of Hematinic agents	01 hr
39	Anti-coagulants	01 hr
40	Anti-platelet agents	01 hr
41	Thrombolytic drugs	01 hr
Unit 7	Drugs Acting on Respiratory system (2 hrs)	
42	Definition, classification, pharmacological actions, dose, indications, and contraindications of Bronchodilators, Expectorants	01 hr
43	Anti-tussive agents, Mucolytic agents	01 hr
Unit 8	Drugs Acting on the Gastro Intestinal Tract (5 hrs)	
44	Definition, classification, pharmacological actions, dose, indications, and contraindications of Anti-Ulcer Drugs	01 hr

45	Anti-Ulcer Drugs	01 hr
46	Anti-emetics	01 hr
47	Laxatives and purgatives	01 hr
48	Anti-diarrheal drugs	01 hr
Unit 9	Drugs Acting on the Kidney (2hrs)	
49	Definition, classification, pharmacological actions, dose, indications and contraindications of Diuretics,	01 hr
50	Anti-diuretics	01 hr
Unit 10	Hormones and Hormone Antagonists (8)	
51	Physiological and pathological role and clinical uses of Thyroid hormones, Anti-thyroid drugs	01 hr
52	Calcitonin	01 hr
53	Parathormone	01 hr
54	Vitamin D	01 hr
55	Insulin, Oral hypoglycemic agents	01 hr
56	Estrogen, Progesterone,	01 hr
57	Oxytocin,	01 hr
58	Corticosteroids	01 hr
Unit 11	Autocoids (3 hrs)	
59	Physiological role of Histamine,	01 hr
60	5 HT and Prostaglandins	01 hr
61	Classification, clinical uses, and adverse effects of antihistamines and 5 HT antagonists	01 hr
Unit 12	Chemotherapeutic Agents (12 hrs)	
62	Introduction, basic principles of chemotherapy of infections, infestations	01 hr
63	neoplastic diseases, Classification, dose, indication and	01 hr
64	contraindications of drugs belonging to following classes	01 hr
65	Penicillins	01 hr
66	Cephalosporins	01 hr

68	Aminoglycosides	01 hr
69	Fluoroquinolones	01 hr
70	Macrolides	01 hr
71	Tetracyclines	01 hr
72	Sulphonamides	01 hr
73	Anti-tubercular drugs	01 hr
Unit 13	Biologicals (2hrs)	
74	Definition, types, and indications of biological agents with examples	01 hr
75	Definition, types, and indications of biological agents with examples	01 hr

Teacher In-charge

Academic In-charge

Principal

Practicals

Course Code: ER20-21P

50 Hours (2 Hours/week)

Scope: This course provides the basic understanding about the uses, mechanisms of actions, dose dependent responses of drugs in simulated virtual animal models and experimental conditions.

Course Objectives: This course will demonstrate / provide hands-on experience in the virtual platform using appropriate software on the following

1. Study of pharmacological effects of drugs like local anaesthetics, mydriatic and mitotic on rabbit eye
2. Screening the effects of various drugs acting in the central nervous system
3. Study of drug effects on isolated organs / tissues
4. Study of pyrogen testing on rabbit

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

1. Study and report the local anaesthetic, mydriatic and mitotic effects of the given drug on the rabbit eye
2. Choose appropriate animal experiment model to study the effects of the given drugs acting on the central nervous system and submit the report
3. Perform the effects of given tissues (simulated) on isolated organs / tissues and interpret the results

4. Interpret the dose dependent responses of drugs in various animal experiment models

Practicals

Introduction to the following topics pertaining to the experimental pharmacology have to be discussed and documented in the practical manuals.

1. Introduction to experimental pharmacology
2. Study of laboratory animals
(a) Mice; (b) Rats; (c) Guinea pigs; (d) Rabbits
3. Commonly used instruments in experimental pharmacology
4. Different routes of administration of drugs in animals
5. Types of pre-clinical experiments: In-Vivo, In-Vitro, Ex-Vivo, etc.
6. Techniques of blood collection from animals

Experiments

Note: Animals shall not be used for doing / demonstrating any of the experiments given. The given experiments shall be carried- out / demonstrated as the case may be, ONLY with the use of software program(s) such as 'Ex Pharm' or any other suitable software

1. Study of local anaesthetics on rabbit eye
2. Study of Mydriatic effect on rabbit eye
3. Study of Miotic effect on rabbit eye
4. Effect of analgesics using Analgesiometer
5. Study of analgesic activity by writhing test
6. Screening of anti-convulsant using Electro Convulsiometer
7. Screening of Muscle relaxants using Rota-Rod apparatus
8. Screening of CNS stimulants and depressants using Actophotometer
9. Study of anxiolytic activity using elevated plus maze method
10. Study of effect of drugs (any 2) on isolated heart
11. Effect of drugs on ciliary motility on frog's buccal cavity
12. Pyrogen testing by rabbit method

Assignments

The students shall be asked to submit written assignments on the following topics (One assignment per student per sessional period. i.e., a minimum of THREE assignments per student)

1. Introduction to Allergy Testing
2. Introduction to Toxicity Studies
3. Drug Facts Labels of US FDA
4. Pre-clinical studies in new drug development
5. Medicines and meals: Before or After food
6. Pre-clinical studies in new drug development
7. Drugs available as paediatric formulations
8. Drug information apps



**MAA OMWATI INSTITUTE OF
PHARMACY DEPARTMENT OF
PHARMACY
Course: Diploma in Pharmacy**

LESSON PLAN

Faculty Name: Mrs. SANDHYA VERMA Subject: Community Pharmacy & Management

Class: D. Pharmacy 2nd Year

Subject Code: ER20-22T

Scope: The course is designed to impart basic knowledge and skills to provide various pharmaceutical care services to patients and general practitioners in the community setup.

Course Objectives: This course will discuss the following:

1. Establishing and running a community pharmacy and its legal requirements
2. Professional aspects of handling and filling prescriptions
3. Patient counselling on diseases, prescription and or non-prescription medicines
4. Scope for performing basic health screening in community pharmacy settings

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

1. Describe the establishment, legal requirements, and effective administration of a community pharmacy
2. Professionally handle prescriptions and dispense medications
3. Counsel patients about the disease, prescription and or non-prescription medicines
4. Perform basic health screening on patients and interpret the reports in the community pharmacy settings

Number of Lectures: 75

Each Lect. Time : 01 hour

Lecture	Topic	Remark/ Date
1	Community Pharmacy Practice	01hr
2	History and development of community pharmacy - International and Indian scenarios	01 hr
3	Professional responsibilities of community pharmacists	01hr
4	Introduction to the concept of Good Pharmacy Practice	01 hr
5	SOP's	01 hr
6	Properties Prescription and prescription handling	01 hr
7	Definition, parts of prescriptions	01 hr
8	legality of prescriptions	01 hr
9	prescription handling	01 hr

10	labelling of dispensed medications (Main label, ancillary label, pictograms)	01 hr
11	brief instructions on medication usage Dispensing process,	01 hr
12	Good Dispensing Practices, dispensing errors and strategies to minimize them	01 hr
13	Communication skills	01 hr
14	Definition, types of communication skills	01 hr
15	Interactions with professionals and patients	01 hr
16	Verbal communication skills (one-to-one, over the telephone)	01 hr
17	Written communication skills	01 hr
18	Body language, Patient interview techniques	01 hr
19	Patient counselling	01 hr
20	Definition and benefits of patient counselling	01 hr
21	Stages of patient counselling - Introduction	01hr
22	counselling content, counselling process, and closing the counselling session	01 hr
23	Barriers to effective counseling	01hr
24	Types and strategies to overcome the barriers	01 hr
25	Patient counselling points for chronic diseases/disorders Hypertension, Diabetes	01hr
26	Asthma, Tuberculosis, Chronic obstructive pulmonary disease, and AIDS	01 hr
27	Patient Package Inserts - Definition, importance and benefits, Scenarios of PPI use in India and other countries	01 hr
28	Patient Information leaflets - Definition and uses	01 hr
29	Medication Adherence Definition,	01 hr

30	factors influencing non- adherence, strategies to overcome non-adherence	01 hr
31	Health Screening Services in Community Pharmacy	01 hr
32	Introduction	01 hr
33	scope, and importance of various health screening services	01 hr
34	for routine monitoring of patients,	01 hr
35	early detection, and referral of undiagnosed cases	01 hr
CLASS TEST		
36	Over The Counter (OTC) Medications	01 hr
37	Definition, need and role of Pharmacists in OTC medication dispensing	01 hr
38	OTC medications in India, counseling for OTC products	01 hr
39	Self-medication and role of pharmacists in promoting the safe practices during self-medication	01 hr
40	Responding to symptoms, minor ailments, and advice for self-care in conditions	01 hr
41	Pain management	01 hr
42	Cough	01 hr
43	Cold	01 hr
44	Diarrhea	01 hr
45	Constipation	01 hr
46	Vomiting	01 hr
47	Fever	01 hr
48	Sore throat	01 hr
49	Skin disorders	01 hr
50	Oral Health (mouth ulcers, dental pain, Gum swelling)	01 hr
51	Community Pharmacy Management	01 hr
52	Community Pharmacy Management	01 hr
53	Legal requirements to set up a community pharmacy	01 hr

54	Legal requirements to set up a community pharmacy	01 hr
55	Site selection requirements	01 hr
56	Site selection requirements	01 hr
57	Pharmacy designs and interiors	01 hr
58	Pharmacy designs and interiors	01 hr
59	Vendor selection and ordering	01 hr
61	Vendor selection and ordering	01 hr
62	Procurement, inventory control methods, and inventory management	01 hr
63	Financial Planning and Management	01 hr
64	Financial Planning and Management	01 hr
65	Accountancy in community pharmacy – Day book, Cash book	01 hr
66	Accountancy in community pharmacy – Day book, Cash book	01 hr
67	Introduction to pharmacy operation softwares – usefulness and availability	01 hr
68	Introduction to pharmacy operation softwares – usefulness and availability	01 hr
69	Customer Relation Management (CRM)	01 hr
70	Customer Relation Management (CRM)	01 hr
71	Audits in Pharmacies	01 hr
72	Audits in Pharmacies	01 hr
73	SOP of Pharmacy Management	01 hr
74	SOP of Pharmacy Management	01 hr
75	Introduction to digital health, mHealth, Online pharmacies	01 hr

Teacher In-charge

Academic In-charge

Principal

Practicals

Note:The following practical shall be carried out in the model community pharmacy with appropriate simulated scenarios and materials. Students shall be trained through role plays wherever necessary. The activities of the students shall be assessed / evaluated using a structured objective assessment form.

1. Handling of prescriptions with professional standards, reviewing prescriptions, checking for legal compliance and completeness (minimum 5)
2. Identification of drug-drug interactions in the prescription and follow-up actions (minimum 2)
3. Preparation of dispensing labels and auxiliary labels for the prescribed medications (minimum 5)
4. Providing the following health screening services for monitoring patients / detecting new patients (one experiment for each activity) Blood Pressure Recording, Capillary Blood Glucose Monitoring, Lung function assessment using Peak Flow Meter and incentive spirometer, recording capillary oxygen level using Pulse Oximeter, BMI measurement
5. Providing counselling to simulated patients for the following chronic diseases / disorders including education on the use of devices such as insulin pen, inhalers, spacers, nebulizers, etc. where appropriate (one experiment for each disease) Type 2 Diabetes Mellitus, Primary Hypertension, Asthma, Hyperlipidaemia, Rheumatoid Arthritis
6. Providing counselling to simulated patients for the following minor ailments (any three) Headache, GI disturbances (Nausea, Vomiting, Dyspepsia, diarrhoea, constipation), Worm infestations, Pyrexia, Upper Respiratory Tract infections, Skin infections, Oral and dental disorders.
- 7 Appropriate handling of dummy dosage forms with correct administration techniques - oral liquids with measuring cup/cap/dropper, Eye Drops, Inhalers, Nasal drops, Insulin pen, nebulizers, different types of tablets, patches, enemas, suppositories
- 8 Use of Community Pharmacy Software and digital health tools

Assignments

The students shall be asked to submit written assignments on the following topics (One assignment per student per sessional period. i.e., a minimum of THREE assignments per student)

1. SOPs for various activities in Community Pharmacy (as discussed in Theory and Practical)
2. List out the various abbreviations, short forms used in prescriptions and their interpretation
3. Patient Information Leaflet for a given chronic disease / disorder
4. Patient Information Leaflet for prescription / non-prescription medicines
5. Preparation of window / shelf display materials for the model community pharmacy
6. Overview of Software available for retail pharmacy management including billing, inventory, etc.
7. Dosage / Medication Reminder Aids
8. Overview on the operations and marketing strategies of various online pharmacies
9. Overview on the common fixed dose combinations
10. Overview on the medications requiring special storage conditions

11. Role of Community Pharmacists in preventing Antimicrobial Resistance
12. Jan Aushadhi and other Generic Medicine initiatives in India
13. Global Overview of Online Pharmacies
14. Community Pharmacy Practice Standards: Global Vs. Indian Scenario
15. Overview of pharmacy associations in India

Field Visit

The students shall be taken in groups to visit community pharmacies and medicine distributors to understand and witness the professional activities of the community pharmacists, and supply chain logistics. Individual reports from each student on their learning experience from the field visit shall be submitted.



MAA OMWATI INSTITUTE OF PHARMACY

DEPARTMENT OF PHARMACY

Course: Diploma in Pharmacy

LESSON PLAN

Faculty Name: Mr. BABU RAM

Subject Name: BIOCHEMISTRY & CLINICAL PATHOLOGY(T)

Class: D. Pharmacy – IInd year

Subject Code: - ER20-23T

Scope: This course is designed to impart basic knowledge on the study of structure and functions of biomolecules and the chemical processes associated with living cells in normal and abnormal states. The course also emphasizes on the clinical pathology of blood and urine.

Course Objectives: This course will discuss the following at the fundamental level

1. Structure and functions of biomolecules
2. Catalytic activity, diagnostic and therapeutic importance of enzymes
3. Metabolic pathways of biomolecules in health and illness (metabolic disorders)
4. Biochemical principles of organ function tests and their clinical significance
5. Qualitative and quantitative determination of biomolecules / metabolites in the biological sample
6. Clinical pathology of blood and urine

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

1. Describe the functions of biomolecules
2. Discuss the various functions of enzymes in the human system
3. Explain the metabolic pathways of biomolecules in both physiological and pathological conditions
4. Describe the principles of organ function tests and their clinical significances
5. Determine the biomolecules / metabolites in the given biological samples, both qualitatively and quantitatively
6. Describe the clinical pathology of blood and urine.

Lecture no.	Particular	Remarks/Date
Module 1: - Introduction		
1.	Scope of biochemistry in pharmacy	
2.	Cell and its biochemical organization	
Module 2: - Carbohydrates		
3.	Definition, classification with examples, chemical properties	
4.	Monosaccharides - Structure of glucose, fructose, and galactose	
5.	Disaccharides - structure of maltose, lactose, and sucrose	
6.	Polysaccharides - chemical nature of starch and glycogen	
7.	Qualitative tests and biological role of carbohydrates	
Module 3: - Proteins		
8.	Definition, classification of proteins based on composition and solubility with examples	
9.	Definition, classification of amino acids based on chemical nature and nutritional requirements with examples	
10.	Structure of proteins (four levels of organization of protein structure)	

11.	Qualitative tests and biological role of proteins and amino acids	
12.	Diseases related to malnutrition of proteins.	
Module 4: - Lipids		
13.	Definition, classification with examples	
14.	Structure and properties of triglycerides (oils and fats)	
Lecture no.	Particular	Remarks/Date
15.	Fatty acid classification - Based on chemical and nutritional requirements with examples	
16.	Structure and functions of cholesterol in the body Lipoproteins - types, composition and functions in the body	
17.	Qualitative tests and functions of lipids	
Module 5: - Nucleic acids		
18.	Definition, purine and pyrimidine bases	
19.	Components of nucleosides and nucleotides with examples	
20.	Structure of DNA (Watson and Crick model) and their functions	
21.	Structure of RNA and their functions	
Module 6: - Enzymes		
22.	Definition, properties and IUB and MB classification	
23.	Factors affecting enzyme activity	
24.	Mechanism of action of enzymes	
25.	Enzyme inhibitors	
26.	Therapeutic and pharmaceutical importance of enzymes	
Module 7: - Vitamins		
27.	Definition and classification with examples	
28.	Sources, chemical nature and functions of Vitamins	
29.	coenzyme form of vitamins	
30.	recommended dietary requirements	
31.	deficiency diseases of fat-and water-soluble vitamins	
32.	Revision and Doubt Clearing session	
Module 8: - Metabolism		
33.	Study of Metabolism cycle	
34.	Study of Metabolism pathways without chemical structures	
35.	Metabolism of Carbohydrates: Glycolysis	
36.	TCA cycle	
37.	Glycogen metabolism	
38.	Regulation of blood glucose level	
39.	Diseases related to abnormal metabolism of Carbohydrates	
40.	Metabolism of lipids: Lipolysis	
41.	β -oxidation of Fatty acid (Palmitic acid)	
42.	ketogenesis and ketolysis	
43.	Diseases related to abnormal metabolism of lipids	
44.	Ketoacidosis, Fatty liver, Hypercholesterolemia	
45.	Metabolism of Amino acids (Proteins)	
46.	General reactions of amino acids and its significance- Transamination and deamination	
47.	Urea cycle and decarboxylation	
48.	Diseases related to abnormal metabolism of amino acids	
49.	Disorders of ammonia metabolism, phenylketonuria	
50.	Alkaptonuria and Jaundice.	
51.	Biological oxidation: Electron transport chain	
52.	Oxidative phosphorylation	
Module 9: - Minerals		
53.	Introduction to minerals	
54.	Types and function of minerals	

55.	Deficiency diseases	
56.	Recommended dietary requirements	
57.	Revision and doubt class	
Module 10: - Water and Electrolytes		
58.	Distribution, functions of water in the body	
Lecture no.	Particular	Remarks/Date
59.	Water turnover and balance	
60.	Electrolyte composition of the body fluids	
61.	Dietary intake of electrolyte and Electrolyte balance	
62.	Dehydration, causes of dehydration and oral rehydration therapy	
Module 11: - Introduction to Biotechnology		
63.	Introduction to Biotechnology	
Module 12: - Organ function tests		
64.	Functions of kidney	
65.	Routinely performed tests to assess the functions of kidney and their clinical significances	
66.	Functions of liver	
67.	routinely performed tests to assess the functions of liver and their clinical significances	
68.	Revision	
69.	Lipid profile tests and its clinical significances	
Module 13: - Introduction to Pathology of Blood and Urine		
70.	Lymphocytes and Platelets	
71.	Role of Lymphocytes and Platelets in health and disease	
72.	Erythrocytes - Abnormal cells	
73.	Significance of Erythrocytes	
74.	Normal and abnormal constituents of urine and their significance	
75.	Test	



MAA OMWATI INSTITUTE OF PHARMACY

DEPARTMENT OF PHARMACY

Course: Diploma in Pharmacy

LESSON PLAN

Faculty Name: Mr. Ankit Kumar Gupta

Subject: PHARMACOTHERAPEUTICS

Class: D. Pharmacy – 2nd Year

Subject Code: ER20-24T

Scope: This course is designed to impart basic knowledge on etiopathogenesis of common diseases and their management along with quality use of medicines.

Objectives: This course will discuss about

1. Etiopathogenesis of selected common diseases and evidence-based medicine therapy
2. Importance of individualized therapeutic plans based on diagnosis
3. Basic methods for assessing the clinical outcomes of drug therapy

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

1. Help assessing the subjective and objective parameters of patients in common disease conditions
2. Assist other healthcare providers to analyse drug related problems and provide therapeutic interventions
3. Participate in planning the rational medicine therapy for common diseases
4. Design and deliver discharge counselling for patients

Number of Lectures: 75

Each Lect. Time: 01 hour

Lecture No	Particular	Remark/ Date
Unit -1:- Introduction (8 hrs)		
1	Pharmacotherapeutics – Introduction, scope,	
2	Pharmacotherapeutics and objectives.	
3	Rational use of Medicines,	
4	Rational use of Medicines,	
5	Evidence Based Medicine,	
6	Essential Medicines List	
7	Standard Treatment Guidelines (STGs)	

8	Standard Treatment Guidelines (STGs)	
Assignment		
Class test		
Unit -2:- Definition, etiopathogenesis, clinical manifestations, non pharmacological and pharmacological management of the diseases associated with (67hrs)		
Unit 2 Part (a) Cardiovascular System (8hrs)		
9	Cardiovascular System- Introduction	
10	Hypertension	
11	Hypertension	
12	Angina	
13	Myocardial infarction	
14	Hyperlipidaemia	
15	Congestive Heart Failure	
16	Congestive Heart Failure	
Assignment		
Class test		
Unit 2 Part (b) Respiratory System (4hrs)		
17	Respiratory System	
18	Asthma	
19	Asthma	
20	COPD	
Class test		
Unit 2 Part (c) Endocrine System (5hrs)		
21	Endocrine System	
22	Diabetes	
23	Diabetes	
24	Thyroid disorders	
25	Thyroid disorders	
Class test		
Unit 2 Part (d) Central Nervous System (8hrs)		
26	Central Nervous System	
27	Epilepsy	
28	Epilepsy	
29	Parkinson's disease	
30	Alzheimer's disease	
31	Stroke	
32	Migraine	
33	Revision	

Class test		
Unit 2 Part (e) Gastro Intestinal Disorders (8hrs)		
34	Gastro Intestinal Disorders	
35	Gastro oesophageal reflux disease	
36	Gastro oesophageal reflux disease	
37	Peptic Ulcer Disease	
38	Alcoholic liver disease	
39	Inflammatory Bowel Diseases (Crohn's Disease and Ulcerative Colitis)	
40	Inflammatory Bowel Diseases (Crohn's Disease and Ulcerative Colitis)	
41	Revision	
Class test		
Unit 2 Part (f) Haematological disorders (4hrs)		
42	Haematological disorders	
43	Iron deficiency anaemia	
44	Iron deficiency anaemia	
45	Megaloblastic anaemia	
46	Megaloblastic anaemia	
	Class test	
Unit 2 Part (g) Infectious diseases (12hrs)		
47	Infectious diseases introduction	
48	Tuberculosis	
49	Tuberculosis	
50	Pneumonia	
51	Pneumonia	
52	Urinary tract infections	
53	Hepatitis	
54	Malaria	
55	HIV and Opportunistic infections	
56	Viral Infections (SARS, CoV2)	
57	Viral Infections (SARS, CoV2)	
	Class test	
Unit 2 Part (h) Musculoskeletal disorders (3hrs)		
58	Musculoskeletal disorders introduction	
59	Rheumatoid arthritis	
60	Osteoarthritis	
	Class test	
Unit 2 Part (i) Dermatology (3hrs)		

61	Dermatology	
62	Scabies	
63	Eczema	
Class test		
Unit 2 Part (j) Psychiatric Disorders (4hrs)		
64	Psychiatric Disorders	
65	Depression	
66	Anxiety	
67	Psychosis	
Class test		
Unit 2 Part (k) Psychiatric Disorders (2hrs)		
68	Ophthalmology Conjunctivitis (bacterial and viral)	
69	Glaucoma	
Class test		
Unit 2 Part (l) Anti-microbial Resistance (2hrs)		
70	Anti-microbial Resistance	
71	Anti-microbial Resistance	
Class test		
Unit 2 Part (m) Women's Health (4hrs)		
72	Women's Health introduction	
73	Polycystic Ovary Syndrome	
74	Dysmenorrhea	
75	Premenstrual Syndrome	
Class test		

Teacher In-charge

Academic In-charge

Principal



MAA OMWATI INSTITUTE OF PHARMACY

DEPARTMENT OF PHARMACY

Course: Diploma in Pharmacy

LESSON PLAN

Faculty Name: Mr. Ankit Kumar Gupta

Class: D. Pharmacy – 2nd Year

Subject: PHARMACOTHERAPEUTICS

Subject Code: ER20-24P

Scope: This course is designed to train the students in the basic skills required to support the pharmaceutical care services for selected common disease conditions.

Objectives: This course will train the students on

1. How to prepare a SOAP (Subjective, Objective, Assessment and Plan) note for clinical cases of selected common diseases
2. Patient counseling techniques/methods for common disease conditions

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

1. Write SOAP (Subjective, Objective, Assessment and Plan) notes for the given clinical cases of selected common diseases
2. Counsel the patients about the disease conditions, uses of drugs, methods of handling and administration of drugs, life-style modifications, and monitoring parameters.

PRACTICALS

Sr. no.	PRACTICAL LIST	
1	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for Hypertension.	
2	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for Angina Pectoris.	
3	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for Myocardial Infraction.	
4	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for Hyperlipidemia.	
5	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for Rheumatoid Arthritis.	
6	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for Asthma.	

7	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for COPD.	
8	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for Diabetes.	
9	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for Epilepsy.	
10	To study the preparation and Discussion of Subjective, Objective, Assessment Plan (SOAP) Notes for Stroke.	
11	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for Depression	
12	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for Tuberculosis.	
13	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for Anemia.	
14	To study the preparation and Discussion of Subjective, (SOAP) Notes for (viral Objective, Assessment, and Plan Conjunctivitis Infection).	
15	To study the preparation and Discussion of Subjective, Objective, Assessment, Plan (SOAP) Notes for Psoriasis.	
16	To perform the study of disease condition. medication, life style modification, monitoring parameters and maintaining documentation of patient counselling on Rheumatoid Arthritis.	
17	To perform the study of disease condition. medication, life style modification, monitoring parameters and maintaining documentation of patient counselling on Hypertension.	
18	To perform the study of disease condition. medication, life style modification, monitoring parameters and maintaining documentation of patient counselling on Asthma.	
19	To perform the study of disease condition. medication, life style modification, monitoring parameters and maintaining documentation of patient counselling on Stroke.	
20	To perform the study of disease condition. medication, life style modification, monitoring parameters and maintaining documentation of patient counselling on Tuberculosis.	
21	To perform the Dose calculation for the paediatrics and Geriatric Patient.	

Teacher In-charge

Academic In-charge

Principal



MAA OMWATI INSTITUTE OF PHARMACY

DEPARTMENT OF PHARMACY

Course: Diploma in Pharmacy

LESSON PLAN

Faculty Name: Mr.Ladlee Saran

Subject: Hospital and Clinical Pharmacy

Class: D. Pharmacy – 2ndYear

Subject Code: ER20-26T

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 1. Explain about the basic concepts of hospital pharmacy administration

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

3. Assist the other healthcare providers in monitoring drug therapy and address drug related problems

4. Interpret common lab investigation reports for optimizing drug therapy

Number of Lectures: 75

Each Lect. Time: 01 hour

Lecture No	Particular	Remark/ Date
Module 1:- Hospital Pharmacy		
1.	Definition, scope, national and international scenario	
2	Organisational structure	
3	Professional responsibilities, Qualification and experience	
4	requirements, job specifications, work load requirements and inter professional relationships Good Pharmacy Practice in hospital	
5	Hospital Pharmacy Standards (FIP Basel Statements,• AHSP)	
6	Introduction to NAQS guidelines and NABH Accreditation and Role of Pharmacists	
Module 2: Different Committees in the Hospital		
7	Pharmacy and Therapeutics Committee - Objectives, Composition, and functions.	
8	Hospital Formulary - Definition, procedure for development.	
9	use of hospital formulary	
10	Infection Control Committee- Role of Pharmacist in preventing Antimicrobial Resistance	
Module 3: Supply Chain and Inventory Control		
11	Preparation of Drug lists - High Risk drugs,	
12	Emergency drugs, Schedule H1 drugs,	
13	NDPS drugs, reserved antibiotics	
14	Procedures of Drug Purchases – Drug selection	
15	short term, long term process,	
16	tender/e-tender process, quotations, etc	
17	Inventory control techniques: Economic Order Quantity.	

18	Reorder Quantity Level, Inventory Turnover etc.	
19	Inventory Management of Central Drug Store – Storage conditions, Methods of storage.	
20	Distribution, Maintaining Cold Chain, Devices used for cold storage	
21	FEFO, FIFO methods	
22	Expiry drug removal and handling, and disposal.	
23	Disposal of Narcotics, cytotoxic drugs	
24	Documentation - purchase and inventory	
Module 4	Drug Distribution	
25	Drug distribution (in- patients and out - patients) – Definition, advantages and disadvantages of individual prescription order method	
26	Floor Stock Method, Unit Dose Drug Distribution Method.	
27	Drug Basket Method.	
28	Distribution of drugs to ICCU/ICU	
29	Distribution of drugs to NICU/Emergency wards.	
30	Automated drug dispensing systems and devices	
31	Distribution of Narcotic and Psychotropic substances and their storage	
Module 5:	Compounding in Hospitals.	
32	Compounding in Hospitals.	
33.	Bulk compounding.	
34	IV admixture services and incompatibilities	
35	Total parenteral nutrition	
Module 6:	Radio Pharmaceuticals	
36	Storage and dispensing of Radio Pharmaceuticals	
37	Disposal of radiopharmaceuticals	
Module 7	Computers in Hospital Pharmacy Practice	

38	Applications of computers in hospital Pharmacy Practice	
39	Electronic health records, Softwares used in hospital pharmacy	
Module 8	Clinical Pharmacy	
40	Definition, scope, and development - in India and other countries	
41	Technical definitions, common terminologies used in clinical settings and their significance such as Paediatrics	
42	Geriatric, Anti-natal Care, Post-natal Care.	
43	Daily activities of clinical pharmacists: Definition, goal, and procedure of Ward round participation	
44	Treatment Chart Review	
45	Drug information and poisons information	
46	Medication history	
47	Patient counseling	
48	Interprofessional collaboration	
49	Pharmaceutical care: Definition, classification of drug related problems.	
50	Principles and procedure to provide pharmaceutical care	
51	Medication Therapy Management, Home Medication Review	
Module 9: Clinical laboratory tests used in the evaluation of disease states		
53	Haematological function	
54	Haematological function interpretation results	
55	Liver function	
56	Liver function test interpretation results	
57	Renal function tests	
58	Thyroid test	
59	Tests associated with cardiac disorders	
60	Tests associated with cardiac disorders	

59	Tests associated with cardiac disorders	
60	Fluid and electrolyte balance	
Module 10: Poisoning		
61	Types of poisoning	
62	Clinical manifestations	
63	Antidotes	
64	Drugs and Poison Information Centre introduction	
65	Drugs and Poison Information Requirements	
66	Information resources with examples, and their advantages and disadvantages	
Module 11 Pharmacovigilance		
67	Definition, aim and scope	
68	Overview of Pharmacovigilance	
Module 12 Medication Errors		
69	Definition, types, consequences to minimize medication errors	
70	strategies to minimize medication errors	
71	LASA drugs	
72	Tallman lettering as per ISMP	
73	Drug Interactions Introduction	
74	Drug Interactions Types	
75	Clinical significance of drug interactions	

Teacher In-charge

Academic In-charge

Principal



MAA OMWATI INSTITUTE OF PHARMACY
DEPARTMENT OF PHARMACY
Course: Diploma in Pharmacy

LESSON PLAN

Faculty Name: Mr. Sunil

Subject: PHARMACY LAW & ETHICS

Class: D. Pharmacy – 2ndYear

Subject Code: ER20-26T

Scope: This course is designed to impart basic knowledge on several important legislations related to the profession of pharmacy in India.

Objectives: This course will discuss about

1. General Perspectives, history, evolution of pharmacy law in India
2. Act and Rules regulating the profession and practice of pharmacy in India
3. Important code of ethical guidelines pertaining to various practice standards
4. Brief introduction to the patent laws and their applications in pharmacy.

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

1. Describe the history and evolution of pharmacy law in India.
2. Interpret the act and rules regulating the profession and practice of pharmacy in India
3. Discuss the various codes of ethics related to practice standards in pharmacy
4. Interpret the fundamentals of patent laws from the perspectives of pharmacy

Number of Lectures: 75

Each Lect. Time: 01 hour

Lecture No	Particular	Remark/ Date
Module 1:-General Principles of Law, History and various Acts related to Drugs and Pharmacy Profession.		
1	General Principles of Law	
2	Acts related to it	
Module 2:-Pharmacy Act 1948 and Rules		
3	Objectives, Definitions, Pharmacy council of India.	
4	Its constitutions and functions	
5	Education Regulations, State and Joint State pharmacy councils	
6	Registration of Pharmacist	
7	Offences and penalties.	
	Revision and Test	
Module 3: Drugs and Cosmetic Act 1940 and Rules 1945 and New Amendments		
8	Objectives, Definitions,	
9	legal definitions of schedules to the Act and Rules	
10	Import of Drugs,	
11	Classes of drugs and cosmetics prohibited from import	
12	Import under license or permit	
Class test		
13	Manufacture of Drugs- Prohibition of manufacture and sale of certain drugs	
14	Conditions for grant of licence	
15	Manufacture of Drug for test	
16	Examination and Analysis	
17	Manufacture of new drug	
18	Loan license and repacking license	
19	Study of Schedule C& C1,	
20	Schedule G,H, H1	
21	Study of Schedule K,P,	

22	Schedule M,N	
23	Schedule X	
24	Sales of drugs- Wholesale drugs	
25	Retailsale and restricted License	
26	Records to be kept in a pharmacy, Drugs prohibited for manufacture and sale in India.	
27	Administration of the Acts and Rules- DTAB, CDL	
28	DCC, GA	
29	LA, CA	
30	DI	
Module 4	Narcotic Drugs and Psychotropic Substances Act 1985 and Rules	
31	Objectives & regulations	
32	Authorities and Officers, Prohibition, Control and Regulation, Offences and Penalties.	
Module 5	Drugs and Magic Remedies (Objectionable Advertisements) Act 1954	
33	Objectives, Definitions	
34	Prohibition of certain advertisements, Classes of Exempted advertisements, Offences and Penalties	
Module 6	Prevention of Cruelty to Animals Act-1960:	
35	Objectives, Definitions, CPCSEA - brief overview, Institutional Animal Ethics Committee, Breeding and Stocking of Animals	
36	Performance of Experiments, Transfer and Acquisition of animals for experiment, Records, Power to suspend or revoke registration, Offences and Penalties	
Module 7	Poisons Act-1919:	
37	Poisons Act-1919: Introduction, objective, definition,	
38	possession, possession for sales and sale of any poison import of poisons	

Module 8 FSSAI (Food Safety and Standards Authority of India) Act and Rules		
39	FSSAI (Food Safety and Standards Authority of India) Act and Rules: brief overview and aspects related to manufacture,	
40	storage, sale, and labelling of Food Supplements	
Module 9 National Pharmaceutical Pricing Authority		
41	National Pharmaceutical Pricing Authority: Drugs Price Control Order (DPCO) - 2013	
42	3. Objectives, Definitions, Sale prices of bulk drugs	
43	Retail price of formulations, Retail price and ceiling price of scheduled formulations,	
44	Pharmaceutical Policy and National List of Essential Medicines (NLEM)	
45	Revision and Test	
Module 10 Code of Pharmaceutical Ethics:		
46	Code of Pharmaceutical Ethics: Definition, ethical principles, ethical problem solving	
47	registration, code of ethics for Pharmacist in relation to his job,	
48	trade, medical profession and his profession	
49	Pharmacist's oath.	
50	Revision and Test	
Module 11 Medical Termination of Pregnancy Act and Rules		
51	Medical Termination of Pregnancy Act and Rules – basic understanding	
52	salient features, and Amendments	
Module 12 Role of all the government pharma regulator bodies		
53	Central Drugs Standards Control Organization (CDSCO), Indian Pharmacopoeia Commission (IPC)	
Module 13 Good Regulatory practices		
54	(documentation, licenses, renewals, e-governance) in Community Pharmacy	
55	Hospital pharmacy, Pharma Manufacturing, Wholesale business,	

56	inspections, import, export of drugs and medical devices	
Module 14 BCS system of classification		
57	Introduction to BCS system of classification, Basic concepts	
58	ANDA, NDA,	
59	New Drug development, New Drugs	
60	Clinical Trials Rules, 2019	
61	Brand v/s Generic, Trade name concept	
62	Introduction to Patent Law and Intellectual Property Rights	
63	Emergency Use Authorization	
Module15 Blood bank		
64	basic requirements	
65	functions	
Module 16 Clinical Establishment Act and Rules		
66	Introduction to Clinical Establishment Act and Rules	
67	Aspects related to Pharmacy	
Module 17 Biomedical Waste Management Rules 2016		
68	Basic aspects, and aspects related to pharma manufacture to disposal of pharma / medical waste at homes	
69	pharmacies, and hospitals	
Module 18 Bioethics		
70	Basic concepts, history and principles. Brief overview of ICMR's	
71	National Ethical Guidelines for Biomedical and Health Research involving human participants	
Module 19, 72 Introduction to the Consumer Protection Act		
Module 20, 73 Introduction to the Disaster Management Act		
Module 21 Medical Devices		
74	Categorization	
75	basic aspects related to manufacture and sale	
Class test		

Teacher In-charge

Academic In-charge

Principal

