

SYLLABUS OF MASTER OF PHARMACY IN CLINICAL PHARMACY AND PHARMACY PRACTICE

First Semester

Category - Departmental / Specialization Basket

Paper - I

PG / CLP / T / 111A Clinical Pharmacy Practice

Clinical Pharmacy Practice, adverse drug reaction, medicines, information, evaluation of medicines, pharmacoconomics, formulations and guidelines, responding to symptoms, counseling, health promotion, concordance and compliance, complementary medicine, substance use and misuse, clinical governance.

Contribution of pharmacy to today health care provision, social and behavioural aspects of pharmacy, communication skills for the pharmacists, WHO and essential medicines concepts, pharmacy management.

Paper - II

PG / CLP / T / 112A Applied therapeutics I & Clinical Research I

Pharmacotherapy of diseases

Pathophysiology and Pharmacotherapy of the following diseases:

Cardiovascular system (hypertension, congestive heart failure, ischaemic heart diseases, myocardial infarction, arrhythmia's, hyperlipidemias)

Respiratory systems (asthma, chronic obstructive airway diseases, pulmonary embolism, drug induced pulmonary diseases).

Renal system (acute & chronic failure, renal dialysis and transplantation, drug dosing in renal failure/impairment, drug induced renal diseases).

Hematological diseases (Anemia, drug induced hematological disorders).

Endocrine system (Diabetes, thyroid diseases, adrenal gland disorder, oral contraceptives, hormone replacement therapy).

Nervous system (Epilepsy, Parkinson's disease headache).

Psychiatric disorder (Schizophrenia, depression anxiety, insomnia, drug-induced psychosis).

Gastrointestinal system (Peptic ulcer diseases Reflux oesophagitis, inflammatory bowel diseases, Hepatitis, Jaundice cirrhosis, Diarrhea and constipation, Drug induced disease).

Rheumatic diseases Rheumatoid arthritis, Osteoarthritis, Gout, systemic lupus erythematosus.

Clinical Research I

Basic concept and general discussion in Clinical Research. Biomedical basis of Disease (Integrated Teaching in Medicine) General Pharmacology, organization and functions of various system including drug used in the management of various diseases. Pre clinical,

toxicity studies, evolution of drugs and Indian regulatory framework. Drugs discovery and Development. Clinical Data Management. ICH GCP Introduction.

Paper - III

PG / CLP / T / 113A Hospital & Community Pharmacy

Hospital Pharmacy

Role of hospital Pharmacy.

Hospital drug policy: Drug committee, formulary and guidelines, research & ethics committee, infection control committee.

Hospital Pharmacy Management:

Staff (Professional & Non-professional), Material (drugs, non-drugs, consumables), Finance (dry budget, cost centers, sources of revenue, revenue collections), Policy & planning, Infrastructural requirements (Building, furniture & fittings, specialized equipment's, maintenance & repair), Workload statistics.

Drug distribution system: Purchase & supply, warehousing, inventory control policy & procedure for storage of drugs, drug distribution methods in-patient and outpatient dispensing and its control procedure. Specific requirements for casualty / emergency, O.T., I.C.U / C.C.U.

Community Pharmacy

Role of community Pharmacy

Prescribed medication order – interpretation & legal requirements

Communication skills - patient counseling, interview techniques, communication with prescription.

Category – Inter - Disciplinary Basket

Paper –IV

PG / CLP / T / 114A Pharmaceutical Preformulation & Product development

Preformulation studies for candidate drug selection, Biopharmaceutical studies for drug selection, Preformulation for product design & development Biopharmaceutics for Product development, Product optimization.

Paper-V

PG / CLP / T / 115A Pharmaceutical Quality control & assurance

Analytical method development and monitoring of drug release from formulation, instrumental methods and techniques involved in drug and formulation testing, in process quality assurance method, selection and testing of major raw materials input; method of drug sampling, statistical quality control of major categories of dosage forms, Good Manufacturing practice (c-GMP), factors affecting GMP , Total Quality management (TQM), ISO, Quality Circle, Chromatographic Techniques needed for Quality Assurance,

Different methods, of Chromatography; (a) TLC,(b)GC,(c) HPLC, (d) HTS and other methods Quality Assurance in Future.

Paper- VI

**PG / CLP / T / 116A Environmental Control & management & Hospital
Waste Management**

Category – Sessional Courses

Sessional 1

PG / CLP / S / 111 Laboratory

Sessional 2

PG / CLP / S / 112 Seminar

Second Semester

Category - Departmental / Specialization Basket

Paper – VII

PG / CLP / T/ 127A Clinical Pharmaceokinetics

Basic consideration, absorption and disposition kinetics following intravenous and extravascular dose, Physiological concepts and kinetics, individualization distribution kinetics, Pharmacological response, metabolic kinetics dose & line dependence, turn over concepts dialysis Assessment of AUC , estimation of elimination half-life from urinary data, estimation of absorption kinetics from plasma concentration data , mean residual Time, amount of drug in body on accumulation to plateau, distribution bound to plasma protein ,blood to plasma concentration ratio.

Paper – VIII

PG / CLP / T/ 128A Clinical Research II

Definition of clinical research, Guidelines for undertaking clinical trails, Data to be submitted for clinical trails. Structure, content & format for clinical study report Approval for clinical trials. Responsibility of sponsor, investigator & ethical committee, Animal toxicology (Non-clinical toxicity study), Animal pharmacology, Human Pharmacology (Phase I), Therapeutic exploratory trail (Phase II), Therapeutic confirmatory trails (Phase II), Post marketing trails (Phase IV), Studies in special population, Special studies: bioavailability /bioequivalence, Pharmacovigilance

Paper – IX

PG / CLP / T/ 129A Applied therapeutics II

Infectious diseases: General guidelines for the rational use of antibiotics, meningitis, Respiratory tract infections, Gastroenteritis, Pneumonia, Bacterial endocarditis, Septicemia, Otitis media, Urinary tract infections, Tuberculosis, Leprosy, protozoal infection and heimenthiasis, HIV and opportunistic infections, Fungal infection, Pyrexia of unknown origin, Rheumatic fever.

Skin and sexually transmitted diseases: Psoriasis, Acne, Dermatitis, Eczema and seabies, syphilis and Gonorrhoea, Drug related skin reaction.

Oncology: General principles of cancer chemotherapy, commonly used cytotoxic drugs, chemotherapy of lung cancer, breast cancer, head and neck cancer hematological malignancies chemotherapy induced myelosuppression, nausea and vomiting.

Ophthalmology: Glaucoma, eye infections.

Pain management: Pain pathways, Analgesics and NSAIDs, Opiates, Local anaesthetics, Neuralgia's including post herpetic, trigeminal and glossopharyngeal neuralgia, Palliative care.

Immunology: Immunoglobulins, Immunologic mechanisms of tissue damage, Auto-immune diseases and immunodeficiency disorders.

Nutrition: Malnutrition and deficiency states enter and parental nutrition.

Category – Sessional Courses

Sessional 1

PG / CLP / S / 121 Term Paper Leading to Thesis

Sessional 2

PG / CLP / S / 122 Seminar

Third and Fourth Semester

Sessional 1

PG / CLP / TH / 21 Thesis Work

Sessional 2

PG / CLP / VV / 22 Viva – Voce