



# TEERTHANKER MAHAVEER UNIVERSITY

(Established under Govt. of U. P. Act No. 30, 2008)

Delhi Road, Moradabad (U.P.)

## PhD PROGRAMME

### SYLLABUS FOR DISCIPLINE-SPECIFIC COURSE MEDICAL PHARMACOLOGY

Course Code: PDS240147	BASICS IN MEDICAL PHARMACOLOGY	L	T	P	C
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<b>Objective:</b>	To familiarize the Research scholar with the Basics of Systemic Pharmacology				
<b>Course Outcomes:</b>	On completion of the course, students will be:				
<b>CO 1:</b>	Know about essential and commonly used drugs and an understanding of the pharmacologic basis of therapeutics.				
<b>CO 2:</b>	Explain the mechanism of action of commonly used drugs				
<b>CO 3:</b>	Understand pharmacovigilance and identify adverse drug reactions and drug 13 interactions of commonly used drugs.				
<b>CO 4:</b>	Select and rationally prescribe drugs based on clinical conditions and the pharmacologic properties, efficacy, safety, and cost of medicines for common clinical conditions of national importance				
<b>CO 5:</b>	Apply pharmacokinetic and pharmacodynamic concepts of drugs to drug selection and dosage regimens				
<b>Course Content:</b>					
<b>Unit 1:</b>	Demonstrate an understanding of the basic principles of Pharmacology including molecular pharmacology. Describe the process of new drug development including preclinical and clinical phases. Describe principles of the pharmacokinetics of drugs and apply these to prescribe medicines for individualization of pharmacological therapy, including the use of medicines in special categories (Paediatrics, Geriatrics, Pregnancy, and Pathological states). Explain the principles of pharmacodynamics and apply these in different therapeutic situations. Describe mechanisms of drug-drug interactions and their clinical importance. Describe pharmacological principles underlying the effects of drugs used in the diagnosis, prevention, and treatment of common systemic diseases in man. Define pharmacovigilance. Describe the importance of pharmacovigilance in ensuring patient safety and the various methods/procedures in pharmacovigilance.				
<b>Unit 2:</b>	Apply and integrate the knowledge of the pathophysiology of diseases and pharmacological principles underlying the effects of drugs, for diagnosis, prevention, and treatment of common systemic diseases in man including disorders of -Synaptic & neuroeffector junctional sites of the autonomic nervous system, Neuromuscular junction, Central nervous system, Cardiovascular system, Endocrine system, Gastrointestinal system, Respiratory system, Renovascular system, Hematological system, Immunological system, Autacoids. Describe the mechanism of action, pharmacological effects and therapeutic status of drugs used for prevention and management of microbial and parasitic				

	infections/infestations and neoplastic disorders. Demonstrate an understanding of the special considerations in pharmacokinetics, mechanism of action, pharmacological effects, and therapeutic status of drugs used for dermatological and ocular disorders.
<b>Text Books:</b>	<ol style="list-style-type: none"> <li>1. Brunton LL, Hilal-Dandan R, Knollmann BC. Goodman and Gilman's The Pharmacological Basis of Therapeutics, 13th edition, McGraw Hill Education, 2018. 22</li> <li>2. Katzung BG. Basic &amp; Clinical Pharmacology, 14th edition, McGraw Hill Education, 2018.</li> <li>3. Papadakis MA, Mcphee SJ. Current Medical Diagnosis &amp; Treatment. 60th edition New York. McGraw Hill Education.2021.</li> <li>4. Ritter M, Flower R, Henderson G, Loke YK, MacEwan D, Rang HP. Pharmacology. Elsevier, 9th edition, 2020.</li> <li>5. Tripathi KD. Essentials of Medical Pharmacology, 8th edition. Jaypee Brothers Medical Publishers Private Ltd: New Delhi 2019.</li> </ol>
<b>Reference Books:</b>	<ol style="list-style-type: none"> <li>1. Vogel HJ. Drug Discovery and Evaluation: Pharmacological Assays Springer; 3rd edition, 2007.</li> <li>2. Sharma S, Velpandian T. Illustrated Reviews Pharmacology. Wolter Kluver, South Asian Edition, 2019.</li> <li>3. Medhi B, Prakash A. Practical Manual of Experimental &amp; Clinical Pharmacology. Jaypee Brothers Medical Publishers, 2nd edition, 2017.</li> <li>4. Alldredge BK, Corelli RL, Ernst ME, Guglielmo Jr. BJ, Jacobson PA, Kradjan WA, Williams BA. Koda-Kimble and Young's Applied Therapeutics Lippincott Williams and Wilkins, 10th edition, 2012.</li> <li>5. Cheston B Cunha, Burke A Cunha. Antibiotic essentials. Jaypee Brothers Medical Publishers 17th edition, 2021.</li> </ol>
<b>Additional Electronic Reference Material:</b>	<ol style="list-style-type: none"> <li>1. National Guidelines on national programs e.g. <a href="https://cdsco.gov.in/opencms/opencms/en/Home">https://cdsco.gov.in/opencms/opencms/en/Home</a></li> <li>2. MOHFW Website <a href="https://www.mohfw.gov.in/">https://www.mohfw.gov.in/</a></li> <li>3. WHO Website <a href="https://www.who.int/">https://www.who.int/</a></li> </ol>