

Course Code: MLE403
Number of Credits: 3T + 2P = 5
Effective from AY: 2022 -2023

Course Title: Clinical Parasitology, Mycology and Virology

Prerequisite for the Course:	Basic knowledge of pathogens and their characteristics.	
Objectives:	• Learning about the parasitological, mycological and virological aspects, their life cycle and understanding clinical aspects about the same for analyses and treatment. • Awareness of virus spread and tests performed for the same for their analyses	
Content:	Module 1: Parasitology Introduction to parasitology, terminologies, definitions, relationships. Protozoa: geographic distribution, habitat, morphology, life cycle, pathogenecity, laboratory diagnosis of the following parasites: ▪ <i>Entamoeba histolytica</i> ▪ <i>Giardia lamblia</i> ▪ <i>Trichomonas vaginalis</i> ▪ <i>Leishmania donovani</i> ▪ <i>Plasmodium</i> ▪ Coccidian parasites causing diarrhea Cestodes: On the same line as protozoan parasites for the following: ▪ <i>Taenia saginata</i> ▪ <i>Taenia solium</i> ▪ <i>Echinococcus granulosus</i> Helminths: On the same line as protozoan parasites for the following: ▪ <i>Trichuris trichiura</i> ▪ <i>Ankylostoma duodenale</i> ▪ <i>Ascaris lumbricaris</i> • <i>Enterobius vermicularis</i> • <i>Wuchereria bancrofti</i>	15hrs
	Module 2: Mycology Introduction to mycology, Classification of fungi and fungal diseases, Laboratory diagnosis of fungal infections, <i>Candida albicans</i> and other candida species Dermatophytes, Cryptococcus, Opportunistic fungi (Aspergillus, Pencillium, Mucor), Subcutaneous mycoses (Mycetoma, Sporotrichosis, Rhinosporidiosis), Histoplasmosis, Fungal toxins.	15hrs
	Module 3: Virology General virology: Definations, classification, properties of viruses, viral replication, cultivation, laboratory diagnosis. • Systemic virology: On the basis of structure, cultivation, pathogenicity, Laboratory diagnosis of the following viruses: i) Bacteriophage	15hrs

	ii) Picomaviruses (Polio viruses) iii) Rhabdoviruses (Rabies virus) iv) Arboviruses (Dengue, Chikungunya, JE) v) Influenza virus vi) Hepatitis virus vii) HIV viii) Herpes virus Practical Module: • Stool examination: gross, microscopic, for adult parasite, segment of Taenia, ova, cysts, and larvae of parasite. • Gross and microscopic features (<i>whenever applicable</i>) of intestinal/ vaginal protozoa. • Laboratory diagnosis of malaria: demonstration of whole parasite, parasite antigen, enzymes, serology. • Gross and microscopic features of cestodes: to include adult worms, segment, larvae, eggs. • Gross and microscopic features of Helminthes: to include adult worms, eggs, larvae. • Diagnostic features-practical demonstration of gross and microscopic features (wet mount, slide culture) and other tests whenever applicable for following: Candida, Cryptococcus, Dermatophyte, Opportunistic fungi. • General virology: types of symmetry, morphology of virus models, cultivation in embryonated egg. • Laboratory diagnosis of the following viruses: Poliovirus, Rhabdovirus, HIV, Hepatitis, Herpes, Influenza, Arboviruses. • Bacteriophage—structure using a model.	30 hrs x 2
Pedagogy:	Lectures/tutorials/assignments/ Presentations/Practicals/ demonstrations.	
Learning Outcome:	By the end of this course, students will be able to 1. Describe the pathogenicity and laboratory diagnosis of protozoans, Cestodes and Helminthes. 2. Know the basis of identification and classification of Fungi and viruses. 3. Perform Gross and microscopic observation procedures for detecting endoparasites.	
References	REFERENCE BOOKS FOR THEORY & PRACTICAL: 1. Ananthanarayan and Paniker's Textbook of Microbiology- Latest edition. 2. Essential of Medical Microbiology by Apurba S. Sastry and Sandhya Bhat- Latest edition. 3. Complete microbiology by C. P. Baveja and V. Baveja. Latest edition. 4. Panikar's Textbook of Medical Parasitology. Latest edition.	