Semester	7 and 8		
Course Code:	MIBI 43814		
Course Name:	Medical Microbiology and Immunology, Pharmaceutical Microbiology		
Credit Value:	4		
Core/Optional	Core		
Hourly Breakdown	Theory	Practical	Independent Learning
	60	-	140

Course Aim/Intended Learning Outcomes:

Upon successful completion of this course student will be able to;

- Describe the causative agent, epidemiology, transmission, pathogenicity, clinical features, laboratory diagnosis, control and prevention of infectious diseases in humans caused by bacteria, viruses, fungi, parasites and prions,
- Explain the principles of antimicrobial agents and the importance of preventing antimicrobial resistance,
- Outline the main features of non-specific and specific immune systems,
- Apply the principles and methods of diagnostic immunology and
- Demonstrate the knowledge and understanding of the processing of pharmaceutical products and its good manufacturing practices.

Course Content:

Medical Microbiology

Host parasite relationships; Normal bacterial flora of the human body, Sterile and non-sterile body sites, Pathogenicity; Sources of infection, Virulence: Entry, establishment, spread and exit of microorganisms in the body, Infectious diseases affecting different body systems with reference to their aetiology, epidemiology, transmission, clinical features, laboratory diagnosis, control and prevention. Infections of the Respiratory tract, Urinary tract, Central Nervous system, Gastro-intestinal tract and the skin (Anatomy and physiology of the sites concerned will also be reviewed briefly).

Methods of sterilization and disinfection used in hospitals and Medical microbiology laboratory, prevention of Hospital-associated infections and community acquire infections, Standard precautions. Collection and transport of clinical specimens, processing of clinical specimens, culture media used in medical microbiology laboratory. Epidemiology of infectious diseases, Expanded Immunization Programme (EPI) / National Immunization Programme in Sri Lanka, Antimicrobial agents and mechanisms of their action, Antibiotic sensitivity testing (ABST), Antimicrobial resistance (AMR).

Immunology:

Innate Immunity, Complement system, Acute phase proteins and cytokines, Lymphocyte subsets, Antigen presentation, Antibody structure and functions, Humoral immunity, Cell mediated immunity

Immune regulation and autoimmunity, Immune response to infections, Hypersensitivity, Transplant immunology, Immunotherapy, Immunization, Diagnostic immunology

Pharmaceutical Microbiology

Microorganisms used in pharmaceutical production, Microorganisms and products used in assays, Microbiological spoilage of pharmaceutical products - Factors, sources and control. Preservatives, sterility test and assurance of sterility

Teaching /Learning Methods: A combination of lectures and tutorials

Assessment Strategy: End of the course unit examination

Continuous Assessment	**Final Assessment**		
0%	100%		
Details:	Theory (%)	Practical (%)	Other (%)
N/A	100	-	-

Recommended Reading:

- Mims, C., Playfair, J., Roitt, I., Wakelin, D. and Williams, R. (1998) *Medical Microbiology*. 2nd Ed. C.V. Mosby Co.
- Timbury, M.C., McCartney, A.C., Thakker, B. and Ward, K.N. (2002) *Notes on Medical Microbiology*. Churchill Livingstone.
- Greenwood, D. Slack, R. Barer, M. and Irving, W. (2012) *Medical Microbiology*. 18th Ed. Churchill Livingstone.
- Barrow, G.I. and Feltham, R.K.A. (1993) Cowan and Steel's Manual for the Identification of Medical Bacteria. 3rd Ed. Cambridge University Press.