



Output of the Workshop on the Harmonization of Syllabi of Microbiology Courses in the Philippines

30 August 2018, Chancellor's Hall, University of the Philippines Los Baños

HARMONIZED SYLLABUS/OUTLINE FOR MEDICAL MICROBIOLOGY (Minimum Course Contents)

LECTURE

- I. **Introduction**
 - A. Scope of medical microbiology
 - B. Natural microflora of the human body
 - C. Diagnostic/clinical microbiology
 - D. Epidemiology and public health
- II. Pathogenesis of Microbial Infections + Chapter 25 of Brock
 - A. General stages in disease development
 - B. Microbial virulence factors/mechanisms
- III. Immunology
 - A. Elements of the immune system
 - i. Cells involved
 - ii. Non-specific defense mechanisms
 - iii. Specific defense mechanisms (adaptive response)
 - B. Immune disorders
 - i. Hypersensitivity
 - ii. Immunodeficiency
 - iii. Autoimmune disorders
- IV. Medically Important Microorganisms and Other Infectious Agents : Their Pathogenesis, Epidemiology and Control
 - A. Bacteria
 - i. Gram-positive bacteria
 - ii. Gram-negative bacteria
 - iii. Gram-variable
 - iv. Cell wall-less
 - B. Viruses
 - i. DNA viruses
 - ii. RNA viruses
 - C. Prions

- D. Fungi
 - i. Agents of superficial mycoses
 - ii. Agents of cutaneous mycoses
 - iii. Agents of subcutaneous mycoses
 - iv. Agents of systemic mycoses
 - v. Agents of opportunistic mycoses
- E. Protozoa
 - i. Amoebae
 - ii. Flagellates
 - iii. Ciliates
 - iv. Sporozoans

LABORATORY EXERCISES

- I. The Gram-positive Cocci
 - A. Staphylococci
 - B. Streptococci
- II. Enteric Gram-negative Bacteria
 - A. Isolation and Identification of *Salmonella* spp. and *Shigella* spp.
 - B. Isolation of *Escherichia coli*
 - C. Isolation of *Vibrio* spp.
- III. Water Bacteriology
 - A. Water potability testing procedures.
- IV. Antibiotic Susceptibility Testing
- V. Virology
 - A. Neutralization
 - B. Egg inoculation
- VI. Mycology
 - A. Morphology of fungi
 - B. Isolation and identification of fungi in the environment
 - C. Study of the superficial fungal agents
 - D. KOH mount
 - E. Tests to differentiate *Trichophyton mentagrophytes* from *Trichophyton rubrum*
 - F. Study of *Sporothrix schenckii*
 - G. Study of agents of chromoblastomycosis

SUGGESTED REFERENCES (PARTIAL LIST)

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ENGELKIRK, PG and DUBEN-ENGELKIRK, J. 2010. Burton's Microbiology for the Health Sciences. 9th ed. Lippincott Williams and Wilkins (LWW). 560 p.

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MURPHY, K, TRAVERS, P, WALPORT, M and JANEWAY, C. 2012. Janeway's Immunobiology. 8th ed. New York : Garland Science.