



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 FOOD MICROBIOLOGY (Minimum Course Contents)

LECTURE

- I. Introduction to Food Microbiology : History and Developments
- II. Detection of Organisms in Food : Culture-Dependent and Non-Culture-Dependent Techniques
- III. Spoilage- and Disease-Causing Microorganisms : Spoilage Mechanisms of Different Food Products, Causative Agents of Diseases and Associated Food Vectors
- IV. The Microbiota of Food Products : Intrinsic Food Properties, Extrinsic Process Variables, Implicit Microbial Characteristics
- V. Food Preservation : Traditional and Novel Techniques
- VI. Beneficial Microorganisms: Microorganisms Used in the Production and Preservation of Food (Fermentation and Biocontrol Agents)
- VII. Food Safety and Food Plant Sanitation : GMP, HACCP, Food Defense, Risk Assessment
- VIII. Introduction to Predictive Microbiology: Design of Experiments and Use of Software/Freeware

LABORATORY

- I. Determination of Index/Indicator Organisms
 - A. Aerobic Plate Counts, Yeasts and Molds, Coliforms, Spore-formers
- II. Determination of Specific Organisms
 - A. Specific : *E. coli*, *Salmonella*, *Staphylococcus*, *Vibrio*, *Listeria*, *Campylobacter*
- III. Beneficial Microorganisms in Food
 - A. Alcoholic and/or lactic acid fermentation
- IV. Microbiological Challenge Testing
 - A. Thermal resistance parameter determination
 - B. Commercial sterility testing

V. Exercise in Predictive Microbiology : Dry Lab.

SUGGESTED REFERENCES (PARTIAL LIST)

DE SOUZA SANT'ANA, A. 2017. Quantitative Microbiology in Food Processing : Modeling the Microbial Ecology. West Sussex, UK : John Wiley and Sons, Ltd. 696 p.

MATTHEWS, KR, KNIEL, KE and MONTVILLE, TJ. 2017. Food Microbiology : An Introduction. 4th ed. Washington, DC : ASM Press. 550 p.

JAY, JM, LOESSNER, MJ and GOLDEN, DA. 2006. Modern Food Microbiology. 7th ed. Springer-Verlag New York, Inc. 790 p.

