



THE MODULE HANDBOOK

FACULTY OF BIOLOGY

MASTER PROGRAMME

MICROBIOLOGY

Module code	BIO-60501
Module level	1 st year of Master Program in Biology
Abbreviation, if applicable	-
Courses related	-
Semester	Odd
Course coordinator(s)	Dr. Endah Retnaningrum, S. Si, M. Eng.
Lecture(s)	1. Dr. Endah Retnaningrum, S. Si, M. Eng. 2. Dr. Miftahul Ilmi, M.Si.
Language	Bahasa Indonesia and English
Classification within the Curriculum	Compulsory Courses
Teaching format/class hours per week during the semester	This course is organized into one class and planned to have 14 teaching weeks and 2 weeks of examination. This course also has laboratory works credits.
Workload	Estimated working hour: 10,5 hours/week.
Credit	2-1 credits
Requirements	-
Course Learning Outcome	<ol style="list-style-type: none">1. Explain the concept of microbial cell and its roles in nature2. Explain the concept of microbial diversity at the cellular, genomic, metabolic level and its roles to environment and other organisms3. Explain the theory and technique of analysis related to the practices and research of microbiology
Syllabus	This course includes an understanding of the differences in ultrastructure of microbial cells which includes prokaryotic cells (bacteria, archaea), eukaryotic cells (protozoa, fungi, and algae) and viruses. An understanding of the differences in infrastructure is the basis for understanding the different processes of nutrition, metabolism, genetic material and gene expression in microbial cells and microbial diversity. Recovery material for Microbiology consists of ultra-microbial cell structures, viral structure and replication, microbial metabolism, microbial genetic information and recombinant DNA technology, microbial diversity, microbial ecology and symbiosis, pathogenic microbes and control. Besides being discussed about the development of the latest research on microbial cells in various aspects.
Study/exam achievements	<ol style="list-style-type: none">a. Midterm: 40%b. Final examination: 40%



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	c. Homework: 20%
Forms of media	White board, notebook, LCD
Reference	<ol style="list-style-type: none">1. Atlas, R.M. 1997. Principles of Microbiology, 2nd ed., Wm. C. Brown Publishers.2. Black J, 2008. Microbiology; Principles And Exploration, 8th ed., John Wiley & Sons, Inc.3. Madigan, M.T., Martinko, J.M. & Parker, J. 2000. Biology of Microorganisms, Prentice Hall International, Inc.4. Presott, L.M., Harley, J..P. & Klein, D.A. 2000. Microbiology, 5th ed., WCB McGraw-Hill.5. Solomon, E.P., Berg, L.R. & Martin, D.W. 1999. Biology. 5th Ed., Saunders College Publishing, Harcourt Brace College Publishers.