MODULE HANDBOOK

	UNIVERSITAS PADJADJARAN **FACULTY OF MATHEMATICS AND NATURAL SCIENCES** **BACHELOR OF BIOLOGY PROGRAMME**	**COURSE CODE:** **D10D-2007**
Module designation	Microbiology Practicum	
Semester in which the module is taught	2	
Persons responsible for the module	1. Dr. Mia Miranti Rustama 2. Prof. Ratu Safitri 3. Prof. Nia Rossiana 4. Asri Peni Wulandari, Ph.D 5. Dr. Keukeu Kaniawati Rosada 6. Febri Doni, Ph.D 7. Yolani Syaputri, Ph.D	
Medium of instruction	Indonesian	
Relation to curriculum	Compulsory course	
Teaching methods	Practice, Student-Centered Learning, Collaborative Learning	
Workload	Total workload : 2720 minutes = 45.33 hours Practice : 1 x 170 minutes x 16 weeks = 2720 minutes = 45.33 hours Exercises : - Self-study : -	
Credit points	1.00 (1.81 ECTS)	
Required and recommended prerequisites for joining the module	Basic biology	
Module objectives/intended learning outcomes	1. Students are able to implement and practice biosafety and biosecurity in the Microbiology Laboratory and explain the use of tools and their working principles Students are able to explain and follow techniques for media preparation and sterilization of materials, microbial isolation and cultivation techniques, cell enumeration, and staining techniques 2. Able to apply microbiology principles in the exploration and utilization of biological resources and sustainable environmental management 3. Students are able to operate and perform microbial observation, biochemical testing, and DNA isolation 4. Students are able to demonstrate and test the sensitivity of bacteria to various antibiotics and compare the phenol coefficient method with antimicrobial chemical activity	
Contents	1. Biosafety and Biosecurity and Introduction to Basic Microbiology Laboratory Equipment 2. Media Preparation and Material Sterilization Techniques 3. Microbial Isolation and Cultivation Techniques 4. Bacterial Cell Enumeration Techniques 5. Staining Techniques 6. Microbial Observation and Motility Techniques: Fungi, Microalgae, Bacteria, and Viruses (Polyhedra) 7. Bacterial Identification Techniques (Gram Negative): Biochemical Tests 8. Microorganism DNA Isolation Techniques 9. Microbial Resistance Tests to Antimetabolites and Antibiotics 10. Phenol Coefficient	
Examination forms	Practice, Quiz, Midterm exam, Practi, and Final exam	
Study and examination requirements	The minimum attendance in lectures is 100%. Final grades are evaluated based on practice (40%), quiz (15%), midterm exam (20%), practicum report (10%), and final exam (15%)	
Reading lists	1. James G. Cappuccino and Natalie Sherman, 2014. Microbiology: A Laboratory Manual, 10th Edition Pearson. 2. Osman Erkmen, 2021. Laboratory Practices in Microbiology 1st Edition. Elsevier. 3. Varghese, N & Joy, N. N. 2014. Microbiology Laboratory Manual. Pineapple Research Station; Kerala Agricultural University.	