Module Handbook: Practices of Parasite and Fish Diseases

A Module Handbook or collection of module descriptions that are also available for students to consult should contain the following information about the individual modules:

Module designation	The fish disease results from the interaction between the environment, host, and pathogens. This practical course focuses on the fish parasite, bacterial disease, fungal disease, and viral disease. The activities include observing disease signs, Koch Postulate test, phenotypic and molecular identification of parasitic, fungal, bacterial, and viral infection in fish and other aquatic organisms.
Module level, if applicable	Undergraduate
Code, if applicable	PIA 20192252
Subtitle, if applicable	Praktikum Parasit dan Penyakit Ikan
Courses, if applicable	-
Semester(s) in which the module is taught	4th
Person responsible for the module	Dr. Ir. Murwantoko, M.Si.
Lecturer	Dr. Ir. Murwantoko, M.Si. Indah Istiqomah, S.Pi., M.Si., Ph.D
Language	Indonesian
Relation to curriculum	Study Program, Compulsory
Type of teaching, contact hours	This practical course is conducted in the laboratory and field (fieldwork) with 50-60 students within eight meetings (110 min/meeting). The learning method consists of practice and discussion, case studies, and collaborative learning.

Workload	Practicum 1 SKS x 170 minutes x 16 meetings = 2,720 minutes = 45.30 hours = 45.30 hours /30 hours = 1.51 ECTS
Credit points	1 credit point
Requirements according to the examination regulations	Students must fully attend (100%) all of the laboratory sessions to be eligible to take the post-test.
Recommended prerequisites	Parasite and Fish Diseases
Module objectives/intended learning outcomes	Course Learning Outcomes: CO-1: Explain the symptoms and characteristics of the causative agent for parasitic fish diseases (PLO8-KK3). CO-2: Explain the symptoms and characteristics of the causative agent for viral fish diseases (PLO8-KK3). CO-3: Explain the symptoms and characteristics of the causative agent for fungal fish diseases (PLO8-KK3). CO-4: Explain the symptoms and characteristics of the causative agent for bacterial fish diseases (PLO8-KK3). Program Learning Outcome: PLO8-KK3: To be able to conduct aquaculture activity start from design and construct aquaculture containers and supporting facilities, manage to produce fish-seed, feeds, health, water quality, and harvest of freshwater, brackish water, and marine organisms through good fish hatchery practices and good aquaculture practices in environment, analyze of socio-economic.

Content	Course Learning Outcome CO1 1. Examination of diseased fish 2. Examination of parasitic disease CO2 1. Isolation of viral disease 2. Molecular identification of fish viral disease CO3 1. Examination of fish fungal disease CO4 1. Isolation of bacterial disease 2. Koch Postulate test of bacterial disease 3. Phenotypic identification of bacterial disease
Study and examination requirements and forms of examination	Lectures Quizzes, assignments Laboratory sessions
Media employed	LCD Zoom Lab Manual

Reading list	Austin, B. and D.A. Austin. 2007. Bacterial Fish Pathogens: Diseases of Farmed and Wild Fish. 4th Edition. Praxis Publishing Carter, J., and V. Saunders. 2007. Virology: principles and applications. John Wiley and Sons Roberts, R.J. 2012. Fish pathology, 4th Edition. W.B. Saunders. Post, G. 1983. Textbook of Fish Health. TFH Pub. Wolf, K. 1988. Fish Viruses and Fish Viral Disease. Cornell University Press.