Module Handbook: Live Feed Culture

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	Live Feed Culture is an elective course for students of the Aquaculture Study Program. This course studies all aspects of live feed, which plays a crucial role in fish and aquatic organisms. This course gives the fundamental and practical knowledge to understand live feed and the importance of live feed in fish hatcheries, criteria and methods for selecting live feed, the biology of some live feed, and its culture techniques.
Module level, if applicable	Undergraduate
Code, if applicable	PIA 20193264
Subtitle, if applicable	Budidaya Pakan Alami
Courses, if applicable	-
Semester(s) in which the module is taught	6th
Person responsible for the module	Dr. Ir. Alim Isnansetyo, M.Sc.
Lecturer	Dr. Senny Helmiaty, S.Pi., M.Sc. Dr. Ir. Alim Isnansetyo, M.Sc.
Language	Indonesian
Relation to curriculum	Study Program, Elective

Type of teaching, contact hours	Activities: 1. Lecture offline and online (lecture, discussion, assignment; 50 min/meeting) 2. Examinations (mid-term and final exam) 3. Independent studies online platform (eLOK, eLISA) (quiz, examination, discussion, and private study) This course uses blended learning and SCL (small group discussion, case-based learning) method.
Workload	1. Lecture 2 SKS x 50 minutes x 16 meetings = 1,600 minutes = 26.67 hours = 26.67 hours/ 30 hours = 0.89 ECTS 2. Structural Assignment 2 SKS x 60 minutes x 16 meetings = 1,920 minutes = 32.00 hours = 32.00 hours/ 30 hours = 1.07 ECTS 3. Self Study 2 SKS x 60 minutes x 16 meetings = 1,920 minutes = 32.00 hours = 32.00 hours/ 30 hours = 1.07 ECTS Total = 3.03 ECTS
Credit points	2 credit points
Requirements according to the examination regulations	Students must attend at least 70% of the total 14 class meetings to take the final exams. In addition, students must fully attend (100%) of all effective laboratory sessions to be eligible to take the post-test.
Recommended prerequisites	-

Module objectives/intended learning outcomes	Course Learning Outcomes: CO-1: Understand the role of several types of live feed in the hatchery of marine and freshwater organisms (PLO3-PI). CO-2: Understand the requirements for live feed that can be used in hatcheries (PLO3-PI). CO-3: Understand the basic principles of phytoplankton culture, laboratory-scale cultivation to mass culture (PLO5-P3). CO-4: Understand the principles of zooplankton culture and its various methods of application (PLO5-P3). CO-5: Understand the principles of culture invertebrates as live feed (PLO8-KK3). Program Learning Outcomes: PLO3-P1: To be able to explain sustainable fisheries and marine systems, including management and utilization of aquatic resources, socio-economics, fish culture, and processing of fishery products. PLO5-P5: To be able to provide an in-depth explanation of the theoretical concepts of techniques and management of aquatic organisms cultivation in fresh, brackish, and/or marine water that are productive, high quality, and sustainable using the latest technology, which includes preparation of infrastructure, management of water, fish-seeds, feed, health, and harvest.

	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 Outcomes: CLO1 1. Introduction CLO2 2. Selecting the live feed 3. Biology of live feed CLO3 4. The principle of phytoplankton culture 5. Scale-up phytoplankton culture 6. Techniques of Phytoplankton culture CLO4 7. Zooplankton Culture (Rotifera/ *Brachiounus* sp.) 8. Zooplankton Culture (*Artemia* sp.) CLO5 9. *Tubifex* sp. culture 10. *Earthworms* culture 11. *Dapnia* sp. and *Moina* sp. culture 12. Maggot culture 13. Azolla culture 14. *Chironomus* culture

Study and examination requirements and forms of examination	Lectures Quizzes, paper, presentation Laboratory sessions Midterm examination Final examination
Media employed	LCD Zoom Video Textbook Lab Manual
Reading list	Anderson R. (Ed.) 2005. Algal Culturing Technique. Elsevier. Amsterdam. Isnansetyo, A. dan Kurniastuty, 1995. Teknik kultur phytoplankton dan zooplankton. Pakan alami untuk pembenihan organisme laut, Kanisius, Yogyakarta. Lavens, P. and P. Sorgeloos (Eds.). 1996. Manual on the Production and Use of Live Food for Aquaculture. FAO. Rome