Module Handbook: Philosophy of Science

Module designation	Philosophy and science concepts, their relation to Pancasila, and the management of research, scientific life, ways of thinking, and scientific publications.
Semester(s) in which the module is taught	First Semester
Person responsible for the module	1. Prof. Dr. Ir. Murwantoko, M.Sc. 2. Prof. Dr. Ir. Alim Isnansetyo, M.Sc. 3. Dr. Rizal Mustansyir, M.Hum.
Language	Indonesian
Relation to curriculum	*Compulsory Course*
Teaching methods	Activities: a) Lecture (lecture and discussion) b) Examinations c) Take-home assignments d) Quiz e) Student presentation
Workload (incl. contact hours, self-study hours)	Working hours: 2 credits of theory. Total Workload: 2 SCU (Semester Credit Unit) = 2 x 45 hours within 1 semester = 3.34 ECTS.
Credit points	2 Credit points
Required and recommended prerequisites for joining the module	*None*

Module objectives/intended learning outcomes	Program Learning Outcomes: PLO1: Demonstrate a Pancasilaist attitude and awareness of the interests of the nation and state PLO3: Applying logical, critical, systematic, and innovative thinking by utilizing information technology for fish farming, fishery resource management, or fishery product processing **Course Learning Outcomes:** CLO 1: Able to understand the concept of philosophy of science and the development of philosophy. (PLO1) CLO 2: Able to explain and ethically apply the concepts of research and various research methods, evaluation, validation, and reliability; methods and techniques for the collection, processing, and presentation of fisheries data; drawing conclusions; presentation; and publication. (PLO3)
Content	1. Philosophy and concept of science I 2. Philosophy and concept of science II 3. Ethics (its relationship with Pancasila) I 4. Ethics (its relationship with Pancasila) II 5. Characteristics and Conditions for the Formation of Science I 6. Characteristics and Conditions for the Formation of Science II 7. Research Ethics I 8. Research Ethics II 9. Inductive and Deductive Thinking Patterns 10. Development of Science in Fisheries Resources, Aquaculture and Fish Processing 11. Scientific Methods of Acquiring and Compiling Science (Fisheries Science) and Research Ethics 12. Group discussion I 13. Group discussion II 14. Group discussion III

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<tr><td>Examination forms</td><td>
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<tr><th>Evaluation Basis</th><th>Evaluation Components</th><th>Percentages</th><th>CLO1</th><th>CLO2</th></tr>
<tr><td rowspan="2">Participatory Activity</td><td>Group presentation</td><td>15%</td><td></td><td>√</td></tr>
<tr><td>Quiz</td><td>15%</td><td>√</td><td></td></tr>
<tr><td>Project results/case study results</td><td>Individual/ Group Assignment</td><td>30%</td><td></td><td>√</td></tr>
<tr><td rowspan="2">Cognitive</td><td>Mid Exam</td><td>20%</td><td>√</td><td></td></tr>
<tr><td>Final Exam</td><td>20%</td><td></td><td>√</td></tr>
<tr><td></td><td>Total</td><td>100%</td><td></td><td></td></tr>
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The total percentage of participatory activities and project results/case studies/PBL results is at least 50%.
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<tr><td>Study and examination requirements</td><td>Students can join the course by registering the study plan (KRS) to enroll in the chosen subjects in each academic semester. The students must meet minimum attendance requirements 70% for joining the final examination.</td></tr>
<tr><td>Reading list</td><td>

Godfrey-Smith, P. (2021) Theory and Reality: An Introduction to the Philosophy of Science. 2nd edn. Chicago: University of Chicago Press.
Potochnik, A. (2017) Idealization and the Aims of Science. Chicago: University of Chicago Press.
Shan, Y. (ed.) (2026) Karl Popper and the Open Future of the Philosophy of Science. London: Routledge.
Stegenga, J. (2026) Heart of Science: A Philosophy of Scientific Inquiry. Chicago: University of Chicago Press.
Suárez, M. (2024) Inference and Representation: A Study in Modeling Science. Chicago: University of Chicago Press.

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