22 January 2019

Course: Philosophy of Science

1. **Type** : Study Program's Compulsory
2. **Code** : PTU 6001
3. **Credit** : 2/0
4. **Semester** : Odd and Even
5. **Description** :

Philosophy of Science course is designed to give students knowledge and tool to think philosophically in the field of animal science. It covers the science of philosophy and its classifications, philosophy of science according to its scope and place, the development of philosophy of science, important previous discoveries, conceptualization and methodology of scientific theory. At the end of lecture, students will be equipped with tool to implement knowledge acquired from the course in designing thesis.

The holistic approach in discussing course content, discussion, and practical activity is intended to enable students in comprehending the subject. The learning activity is implemented through student-centered activity (i.e. discussion, study case, and practical activity). Students are assessed and evaluated through structural group assignment, individual assignment, class participation, and written examination.

6. **Course Outcomes (CO)**

CO 1 : Able to comprehend the science development and its historical aspects, viewed from science classification, philosophy of science, science-philosophy relationship, and systematics of science philosophy.

CO 2 : Able to describe science development in various eras and civilizations, i.e. ancient, medieval, Islam, India, China, Japan, and Renaissance. Able to describe revolution in natural philosophy, revolution of civilization (science during the industrial revolution, the intellectual origin of the French revolution, romance-science reaction, scientific civilization (science in 19th and 20th century: problems and prospects).

CO 3 : Able to explain the components of scientific approach: empirical data, theoretical explanation, empirical procedure, science structures, conceptual changes and science development, scientific-based movement, and philosophical status of scientific theories.

7. **The Alignment Between CO and ELO**

CO*	ELO**																
	A				B			C				D					
	1	2	3	4	1	2	3	1	2	3	4	1	2	3	4	5	6
CO 1																	
CO 2																	
CO 3																	

*CO refers to point 6.

**Expected Learning Outcomes (ELO) are written below,

A. Attitudes and Behaviors

The graduates are able to behave well, correctly, and culturally as the result of internalization and actualization of values and norms, which is reflected in a spiritual and social life through learning process, experience, research, and/or community development in the animal husbandry.	
1	Piety to God and be able to show religious attitude and maintain the humanity values in carrying the task, which is based on religion, moral, and ethics.
2	Be proud and love the homeland show nationalism, and contribute to the improvement of the life quality in the community, nation and country, and the advancement of civilization according to Pancasila.
3	Showing the social sensitivity and attention to the community and environment by respecting the culture diversity, view, religious, beliefs, and other people's opinion, and also obey the rules.
4	Be accountable in carrying the professional practice that includes ability to accept accountability towards decision and professional action. It shall be according to the scope of the practice under their responsibility and laws.
B. Mastery in Sciences Master the theory of the current science in the animal husbandry and its application.	
1	Able to master the current animal science and its application theory.
2	Able to master the livestock production science, animal nutrition and fed science, animal products technology, and the livestock social economics in relation to food security and environment.
3	Able to master the design, management, and development of livestock research.
C. Special Skills The graduates are able to develop science, technology, and arts in the animal husbandry through interdisciplinary/multidisciplinary innovative and tested research.	
1	Able to make innovation in the animal husbandry based on the development of science and technology.
2	Able to design interdisciplinary and multidisciplinary research in the animal husbandry.
3	Able to formulate and solve problems in the national development especially in terms of animal husbandry.
4	Able to solve problems and anticipate issues in the development of animal science and industry.
D. General Skills The graduates are able to manage resources by utilizing science, technology, and arts to solve problems in the animal husbandry with current science and also conduct research with accountability and full responsibility.	
1	Able to develop logical, critical, systematic, and creative thought through scientific research, creation of design in the science and technology, which pays attention and applies humanity values according to their expertise. The graduates are able to arrange scientific concept and the study result based on the principles, procedures, and scientific ethics.
2	Able to identify the science that becomes their research object and position it to a research map by using information technology in the context of science development and expertise implementation developed through interdisciplinary or multidisciplinary approaches.
3	Able to make a decision in the context of solving problems in the development of science and technology, which pays attention and applies humanity values based on analysis study or experiment towards information and data.
4	Able to communicate the result of reasoning and scientific research in form of thesis and scientific writing responsibly based on academic ethics in the accredited national journal.
5	Able to maintain the academic integrity generally and avoid the plagiarism practice.
6	Able to communicate spoken and written English effectively by using the information technology for the development of animal science and its implementation.

8. Course Content

Week	CO	Topic/Subtopic	Learning Activity	Assessment Tools	Allocated Time	Lecturer

22 January 2019

1	CO 1	Introduction a. Science origin and its development b. Classification of science c. Philosophy of science			2 hours	Budi Prasetyo Wb (A) Sudi Nurtini (B)
2	CO 1	Introduction to philosophy a. The meaning of philosophy b. Material and formal objects of philosophy c. Science-philosophy relationship			2 hours	Budi Prasetyo Wb (A) Sudi Nurtini (B)
3	CO 1	Introduction to philosophy: a. Philosophical problem b. Thinking philosophically c. Branches of philosophy			2 hours	Budi Prasetyo Wb (A) SUdi Nurtini (B)
4	CO 1	The scope and position of philosophy of science a. The difference between philosophy and philosophy of science b. Philosophy systematics, ontology, epistemology, and axiology.			2 hours	Sumadi (A) Budi Guntoro (B)

		c. Philosophy of science-epistemology relationship d. Philosophy of science-other philosophical branches relationship e. Philosophy of science-scientific fields relationship				
5	CO 2	The history of philosophy of science development a. Science during ancient and medieval civilizations b. Science during various civilizations/eras			2 hours	Sumadi (A) Budi Guntoro (B)
6	CO 2	The history of philosophy of science development a. Science development during Renaissance era b. Science during revolution era.			2 hours	Sumadi (A) Budi Guntoro (B)
7	CO 2	The history of philosophy of science during 19th and 20th century			2 hours	Sumadi (A) Budi Guntoro (B)
Midterm Examination						

8	CO 2	General approaches on the philosophy of science a. Scope and its relationship with other fields b. The historical development of philosophy of science – classic period and medieval eras: the beginning			2 hours	Sumadi (A) Budi Guntoro (B)
9	CO 2	General approach on the philosophy of science a. The historical view of philosophy of science development during - 17th and 18th centuries: from manifest to critics - World War I: the philosophy of classic physics - debates on the 20th century: positivist and historian				
10	CO 2	Conceptualization and general methodology on scientific approaches:			2 hours	Yuni Erwanto (A) Subur Priyono SB (B)

		- empirical data and its theoretical interpretation - empirical science approach - formal structure of science - conceptual changes and science development				
11	CO 3	Conceptualization and general methodology on scientific movements: - discovery and rationality - legitimation and validation - unification, pluralism, and reductionism			2 hours	Yuni Erwanto (A) Subur Priyono SB (B)
12	CO 3	More issues involving the status of philosophy of science: - Proposition status and scientific concept/entity - Analysis of philosophy and scientific practices			2 hours	Yuni Erwanto (A) Subur Priyono SB (B)
13	CO 3	More issues involving science and culture			2 hours	Yuni Erwanto (A) Subur Priyono SB (B)
14	CO 3	Summary and evaluation: - course summary			2 hours	Budi Prasetyo Wb (A)

		- course evaluation				Sudi Nurtini (B)
Final Examination						

9. Assessment

Component	CO	Percentage (%) for final grade	Minimum Satisfactory Level
Midterm		25	70
Final Examination		25	70
Quiz		5	70
Assignment/ Paper		15	70
Presentation		15	70
Group discussion		5	
Discipline		Prerequisite	
Participation		5	
Others		5	
Total		100	

10. Lecturer

1. Prof. Budi Guntoro, Ph.D.
2. Prof. Dr. Budi Prasetyo Widyobroto
3. Prof. Dr. Sumadi
4. Prof. Dr. Sudi Nurtini
5. Yuny Erwanto, Ph.D.

11. Reference

1. Gie, T.L. 2012. Pengantar Filsafat Ilmu. Penerbit Liberty, Yogyakarta.
2. Ihsan, H.A.F. 2010. Filsafat Ilmu. Penerbit PT. Rineka Cipta, Jakarta.
3. Komara, E. 2011. Filsafat Ilmu dan Metodologi Penelitian. Penerbit PT. Refika Aditama, Bandung
4. Ravertz, J.R. 1982. Filsafat Ilmu, terjemahan The Philosophy of Science. Oxford University Press. Diterjemahkan oleh S. Pasaribu. Pustaka Pelajar, Yogyakarta.
5. Susanto, A. 2011. Filsafat Ilmu. Penerbit PT. Bumi Aksara, Jakarta.
6. Tim Dosen Filsafat. 2010. Filsafat Ilmu. Liberty, Yogyakarta.