



**YOGYAKARTA STATE UNIVERSITY  
FACULTY OF MATHEMATICS AND NATURAL SCIENCES**

**SYLLABUS**

Study Program : Science Education  
Course/ Code : Philosophy of Science/ SSC236  
Semester : 7  
Lecturer : Prof. Dr. Zuhdan Kun Prasetyo, M. Ed.  
Widodo Setiyo Wibowo, M. Pd. ([widodo\\_setiyo@uny.ac.id](mailto:widodo_setiyo@uny.ac.id))

**I. Course Description**

The aim of this course is to facilitate student to build their understanding and theory about philosophy of science. This course will examine: science and philosophy, characteristic of science, science development methods, tools to think scientifically development, history of science development, assumption in science development, source and limitation of science development, truth criterion of science, ideologies in philosophy of science, ontology of science, epistemology of science, and axiology of science.

**II. Standard of Competence**

After accomplish this course, students have experiences in synthesizing the ontological, epistemological, and axiological aspects of science.

**III. Program of Teaching Learning Activity**

Meeting	Basic Competencies	Essentials Concept	Learning Strategy	References
1	Introductory vignette			
2	Understand the correlation between science and philosophy	Science and philosophy	Lecture and discussion	A1, A2
3	Explain the characteristic of science	Characteristic of science	Presentation and discussion	A1, A2, A3
4	Describe the method to develop science	Science development methods	Presentation and discussion	A1, A2 A3

5	Explain some sources of science development	Source of science development	Presentation and discussion	A1, A2
6	Describe the truth criterion in science	Truth criterion of science	Presentation and discussion	A2, A3
7	Mention some assumptions in science development	Assumption in science development	Presentation and discussion	A2
8	Midterm Exam			
9	Describe limitation of science development	Limitation of science development	Presentation and discussion	A2
10	Explain history of science development	History of science development	Presentation and discussion	A1, A2, A3
11	Explain tool to think scientifically	Tool to think scientifically	Presentation and discussion	A1, A2
12	Mention ideologies in philosophy of science	Ideologies in philosophy of science	Presentation and discussion	A3
13	Explain ontology of science	Ontology of science	Presentation and discussion	A2, A3
14	Explain epistemology of science	Epistemology of science	Presentation and discussion	A2, A3
15	Explain axiology of science	Axiology of science	Presentation and discussion	A1, A2, A3
16	Final Exam			

#### IV. References

##### A. Compulsory:

1. Okasha, Samir. (2002). *Philosophy of Science a very short introduction*. New York: Oxford University Press
2. Jujun S. Suriasumantri. (2007). *Filsafat Ilmu Sebuah Pengantar Populer*. Jakarta: Pustaka Sinar Harapan
3. Peter Soedjo. (2004). *Pengantar Sejarah dan Filsafat Ilmu Pengetahuan Alam*. Yogyakarta: Gadjah Mada University Press

##### B. Additional:

1. Shanker, Stuart G. (2004). *Philosophy of Science, Logic and Mathematics in the Twentieth Century*. New York: Routledge

2. Klee, Robert. (1997). *Introduction to the Philosophy of Science - Cutting Nature at Its Seams*. New York: Oxford University Press
3. Bird, Alexander. (1998). *Philosophy of science*. Edinburg: Routledge
4. Rosenberg, Alex. (2005). *Philosophy of science*. New York: Routledge
5. Noeng Muhadjir, 2001. *Filsafat Ilmu*. Yogyakarta, Rakesarasin
6. Ahmad Tafsir. 2006. *Filsafat Ilmu*. Bandung: Remaja Rosdakarya Bandung

## V. Evaluation

No.	Component	Worth
1	Participation	10 %
2	Assignment	40 %
3	Midterm exam	25 %
4	Final exam	25 %

Tambahan jam: selasa jam 13.40, kamis jam 11.00-15.30