



# THE MODULE HANDBOOK

## FACULTY OF BIOLOGY

### Philosophy of Science

<b>Module code</b>	BIO 40009
<b>Module level</b>	3 <sup>rd</sup> year of Undergraduate Program in Biology
<b>Abbreviation, if applicable</b>	-
<b>Sub-heading, if applicable</b>	-
<b>Courses included in the module, if applicable</b>	-
<b>Semester/term</b>	Even
<b>Module coordinator(s)</b>	Drs. Sudjino, M.S.
<b>Lecture(s)</b>	1. Drs. Sudjino, M.S. 2. Dr. Arqom Suwanjono 3. Susilohadi, S.Si., M.Si., Ph.D. 4. Dr. Eko Agus Suyono, M.App.Sc. 5. Dr. Hari Purwanto, M.S.
<b>Language</b>	Indonesia
<b>Classification within the Curriculum</b>	Compulsory
<b>Teaching format/class hours per week during the semester</b>	This course is organized into 4 classess and planned to have 14 teaching weeks and 2 weeks of examination.
<b>Workload</b>	Estimated working hour: 7 hours/week.
<b>Credit points</b>	2-0 credits
<b>Requirements</b>	≥ 60 credits
<b>Learning goals/ competencies</b>	<ol style="list-style-type: none"><li><b>1. Knowledge and understanding</b> The basic concepts, principles and theories relating to the philosophical thingking of science.</li><li><b>2. Ability/intellectual skill</b><ol style="list-style-type: none"><li>a. To analyze and solve a problem, also develop a plan of activities in the field of biology with a basic phylosophy of science.</li><li>b. Formulate and prove a hypothesis.</li></ol></li><li><b>3. Practical skill</b> Using the scientific literature and make notes effectively.</li><li><b>4. Managerial and transferable skill</b></li></ol>



# THE MODULE HANDBOOK

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	<ul style="list-style-type: none"><li>a. Perform effective communication (written, oral, and with pictures) in the field of biology that use philosophy of science.</li><li>b. Working in groups in solving the problem based on philosophy of science.</li><li>c. Learning independently both in the new environment and that has been known previously, with an open and critical spirit.</li><li>d. Learn effectively to the development of the profession and wider scope in career.</li></ul> <p><b>5. Attitude</b></p> <ul style="list-style-type: none"><li>a. Have a curiosity.</li><li>b. Respect for the originality of ideas, concepts and discoveries in the field of biology as a whole.</li><li>c. Sensitive to face biological problems in the global scope/regional/local, as well as trying to solve them, either individually or in groups.</li><li>d. Pay attention and be able to appreciate the views and opinions of the team members.</li></ul>
<b>Content</b>	This course discusses the nature of science is covered in the material: the direction of philosophical thinking, knowledge source and criterion of truth, reason and logic, metaphysics, assumptions, probability, and the limits of science, history and structure of knowledge, scientific methods, language, logic, mathematics, and statistics, legal inference, science and morals, science and culture, science and language, research and scientific writing.
<b>Study/ exam achievements</b>	<ul style="list-style-type: none"><li>1. Midterm: 30 %</li><li>2. Final examination: 40 %</li><li>3. Quiz: 15 %</li><li>4. Assignment: 15 %</li></ul>
<b>Forms of media</b>	White board, LCD, notebook, video and animation.
<b>Literature</b>	<ul style="list-style-type: none"><li>1. Suriasumantri, J. S., 1987. Filsafat Ilmu: Sebuah Pengantar Populer. Pustaka Sinar Harapan, Jakarta.</li><li>2. Suriasumantri, J. S., 2001. Ilmu Dalam Perspektif: Sebuah Kumpulan Karangan Tentang Hakekat Ilmu. Yayasan Obor Indonesia, Jakarta.</li><li>3. Rapar, J. H., 1995. Pengantar Logika: Asa-Asas Penalaran Sistematis, Kanisius, Yogyakarta.</li><li>4. Verhaak, C. dan R. Haryono Imam. 1995. Filsafat Ilmu Pengetahuan: Telaah Atas Cara Kerja Ilmu-Ilmu, Gramedia, Jakarta.</li><li>5. Keraf, A. S. dan Mikhael Dua., 2001. Ilmu Pengetahuan: Sebuah Tinjauan Filosofis, Kanisius, Yogyakarta.</li></ul>



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6. Tim Dosen Filsafat Ilmu. 1996. Filsafat Ilmu, Liberty, Yogyakarta.
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