MINISTRY OF EDUCATION, CULTURE, RESEARCH, AND TECHNOLOGY
UNIVERSITAS NEGERI SURABAYA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
Ketintang Campus, D-1 Building, Surabaya 60231 +6231-8296427
Website: www.fmipa.unesa.ac.id, email: info_fmipa@unesa.ac.id

Master Program of Science Education **Module Handbook**

Module Name :	*IPA Sekolah/* *Science for High School*
Module level :	*Master Program of Science Education*
Course Code :	*8410102222*
Abbreviation, if applicable:	*-*
Courses included in the module, if applicable:	*Not Applicable*
Semester/Term	*1st /First Year*
Module coordinator(s)	*Dr. Wahono Widodo, M.Pd.*
Lecturer(s):	*Dr. Wahono Widodo, M.Pd.* *Dr. Raharjo, M.Si.*
Language:	*Indonesian Language*
Classification within the curriculum:	*~~Compulsory~~/ Elective*
Teaching format/class hours per week during the semester:	*2 contact hours of lectures (Indonesia credit semester or CU*)*
Workload :	*2 x 50 minutes lectures, 2 x 90 minutes structured activity, 2 x 100 minutes individual activity, 14 weeks per semester, 112 total hours per semester ~ 4.48 ECTS***
Credit Point:	*2 CU (4.48 ECTS)*
Requirements:	
Learning goals/competencies:	**Knowledge (KNO-2)** *CLO1* *Mastering science material in accordance with the scientific field based on the applicable school curriculum through literature review.* **Competency (COM-3)** *CLO2* *Designing science materials according to the school curriculum that can be used in science learning activities at schools or to support science learning research activities in schools*
Content	*This course examines concepts/principles/laws related to school science, including the organization of living systems (cell focus), the organization of the human body (digestive system, respiratory system, circulatory system, excretory system, and regulatory system), ecology, pollution, and global warming, inheritance and biotechnology, structure and function of plants and animals, motion and Newton's laws of motion, energy, work, and simple machines including skeletal-muscular systems, photosynthesis, alternative energy, temperature, heat, and heat transfer, the law of thermodynamics, including the thermoregulation system of*

<table>
<tr><td></td><td>living things, waves and sound including its use in the medical field, light and optical devices, electricity and magnetism, atoms, molecules, elements of solution compounds, additives, addictive and psychotropic substances, earth structure, disaster mitigation and response, universe (solar system, universe/cosmology). The assessment also includes potential misconceptions, efforts to overcome them, and alternative inquiries regarding these concepts/principles/laws. Lectures use the principle of flip learning, including independent study, discussion, and application exercises. Assessment includes participation, assignments, midterms, and end of semester exams.</td></tr>
<tr><td>Attribute Soft skill:</td><td>Scientific report, public speaking, and team work</td></tr>
<tr><td>Study/exam achievements:</td><td>Students are considered to be competent and pass if at least get 70. Final score is calculated as follows: 20% Participation + 30% Assignment + 20% Middle Exam (UTS) + 30% Final Exam (UAS)
Final index is defined as follow:
<table><tr><th>Index</th><th>Converted Score</th><th>Score Range</th></tr><tr><td>A</td><td>4.00</td><td>85 ≤ A ≤ 100</td></tr><tr><td>A-</td><td>3.75</td><td>80 ≤ A- < 85</td></tr><tr><td>B+</td><td>3.50</td><td>75 ≤ B+ < 80</td></tr><tr><td>B</td><td>3.00</td><td>70 ≤ B < 75</td></tr><tr><td>B-</td><td>2.75</td><td>65 ≤ B- < 70</td></tr><tr><td>C+</td><td>2.50</td><td>60 ≤ C+ < 65</td></tr><tr><td>C</td><td>2.00</td><td>55 ≤ C < 60</td></tr><tr><td>D</td><td>1.00</td><td>40 ≤ D < 55</td></tr><tr><td>E</td><td>0.00</td><td>0 ≤ E < 40</td></tr></table></td></tr>
<tr><td>Learning Methods :</td><td>Case Method, Discussion, and Article Review</td></tr>
<tr><td>Form of Media:</td><td>Power Point slides, e-book file, and multimedia.</td></tr>
<tr><td>Literature (primary references):</td><td>1. James Trefil & Robert M. Hazen. 2010. The Science (Integrated Approach). NY: John Wiley & Sons.
2. Widodo, W. dkk. 2016. Buku Siswa IPA Kelas VII. Jakarta: Kemdikbud.
3. Zubaidah, S., dkk. 2016. Buku Siswa IPA Kelas VIII dan IX. Jakarta: Kemdikbud.
4. Tim. 2008. BSE IPA CTL Kelas VII, VIII, IX. Jakarta: Kemdikbud.
5. Giancoli, Douglas. 2014. Physics: Principles with Applications II Ed 7E. California: Addison-Wesley.
6. Chang, Raymond. 2005. General Chemistry the Essential Concepts Third Edition. USA: McGraw Hill.
7. Campbell, Neil A, Jane B.Reece dan Lawrence G.Mitchell. 2003. Biologi. California: Benjamin Cummings</td></tr>
<tr><td>Notes:</td><td>*1 CU in learning process = three periods consist of: (a) scheduled instruction in a classroom (50 minutes); (b) structured activity (90 minutes); and (c) individual activity (100 minutes) according to according to Rector Decree of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2020</td></tr>
</table>

	***1 CU = 2.24 ECTS according to Rector Decree of Universitas Negeri Surabaya No. 598/UN38/HK/AK/2020*
	Total ECTS = (total hours workload/ 60 min) / 25 hours* **Each ECTS is equals with 25 hours
Last Amendment	*5 January 2023*