



MINISTRY OF HIGHER EDUCATION, SCIENCE, AND
TECHNOLOGY
UNIVERSITAS NEGERI SURABAYA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
UNDERGRADUATE PROGRAM OF MATHEMATICS EDUCATION

Ketintang Campus, Jalan Ketintang, C8 C9 Building, Surabaya 60231

Phone: +62 895335466373, email: s1-pmat@unesa.ac.id

Website: <https://pendidikan-matematika.fmipa.unesa.ac.id/>

Undergraduate Program of Mathematics

Module Handbook

Module Name:	Basic Concepts of Science/ Konsep Dasar IPA
Module Level:	Sarjana (S-1) / Undergraduate
Abbreviation, if applicable:	8420202231
Sub-heading, if applicable:	-
Course included in the module, if applicable:	-
Semester/term:	1 th / First year
Module Coordinator(s):	Beni Setiawan, S.Pd., M.Pd., Ph.D.
Lecturer(s):	Ahmad Qosyim, S.Si., M.Pd. Beni Setiawan, S.Pd., M.Pd., Ph.D. Tutut Nurita, S.Pd., M.Pd. Dr. An Nuril Maulida Fauziah, S.Pd., M.Pd. Enny Susiyawati, S.Si., M.Sc., M.Pd., Ph.D. Dyah Permata Sari, S.Pd., M.Pd. Ahmad Fauzi Hendratmoko, M.Pd. Ernita Vika Aulia, S.Pd., M.Pd. Fikky Dian Roqobih, S.Pd., M.Pd.
Language:	Indonesia
Classification within the curriculum:	Compulsory course/ elective studies
Teaching format/class hours per week during the semester	Teaching format: lectures, tutorial assignment, and individual Study/ 2 x 170 minutes = 340 minutes = 5.7 hours lectures
Workload:	16 weeks per semester consisting of: <ul style="list-style-type: none">• 1 hour lectures (1 x 50 minutes) per week,• 1 hours assignments (1 x 60 minutes) per week,• 1 hours individual study (1 x 60 minutes) per week, Total workload : 16 x 2 x 170 minutes = 5,440 minutes = 90,67 hours = 3.1 ECTS*
Credit Point:	2
Requirements:	N/A



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Learning Goals:	<p>PLO-2: Demonstrate a resilient, collaborative, adaptive, innovative, inclusive character, demonstrate a lifelong learning spirit, and demonstrate an entrepreneurial spirit.</p> <p>PLO-3: Develop logical, critical, systematic, and creative thinking in performing specific work within their field of expertise and in accordance with the relevant field's work competency standards.</p> <p>PLO-4: Develop self-development sustainably and collaboratively.</p>																																																												
Content:	<p>Studying the basic understanding of Natural Sciences. This course covers basic concepts in Natural Sciences such as the properties of matter, changes in matter, energy, and interactions between objects. Its scope includes understanding basic of Natural Sciences concepts, the application of concepts in everyday life, and the relationship between Sciences and Mathematics. By taking this course, students are expected to understand the importance of Natural Sciences in everyday life and develop scientific thinking skills.</p>																																																												
Study/exam achievements	<ul style="list-style-type: none"> • Students are considered competent and pass if the final score is at least 55 or C. • Final score is calculated as follows: <table border="1" data-bbox="576 1272 1380 2029"> <thead> <tr> <th>Week</th> <th>Course Learning Outcomes (CLO)</th> <th>Programme Learning Outcomes (PLO)</th> <th>Evaluation (%)</th> </tr> </thead> <tbody> <tr><td>1</td><td>CLO-2</td><td>PLO-3</td><td>5</td></tr> <tr><td>2</td><td>CLO-3</td><td>PLO-3</td><td>5</td></tr> <tr><td>3</td><td>CLO-2</td><td>PLO-2</td><td>5</td></tr> <tr><td>4</td><td>CLO-3</td><td>PLO-3</td><td>5</td></tr> <tr><td>5</td><td>CLO-1</td><td>PLO-2</td><td>5</td></tr> <tr><td>6</td><td>CLO-2</td><td>PLO-4</td><td>5</td></tr> <tr><td>7</td><td>CLO-2</td><td>PLO-3</td><td>5</td></tr> <tr><td>8</td><td>CLO-4</td><td>PLO-4</td><td>15</td></tr> <tr><td>9</td><td>CLO-3</td><td>PLO-2</td><td>5</td></tr> <tr><td>10</td><td>CLO-3</td><td>PLO-3</td><td>5</td></tr> <tr><td>11</td><td>CLO-3</td><td>PLO-3</td><td>5</td></tr> <tr><td>12</td><td>CLO-3</td><td>PLO-3</td><td>5</td></tr> <tr><td>13</td><td>CLO-3</td><td>PLO-3</td><td>5</td></tr> <tr><td>14</td><td>CLO-3</td><td>PLO-3</td><td>5</td></tr> </tbody> </table>	Week	Course Learning Outcomes (CLO)	Programme Learning Outcomes (PLO)	Evaluation (%)	1	CLO-2	PLO-3	5	2	CLO-3	PLO-3	5	3	CLO-2	PLO-2	5	4	CLO-3	PLO-3	5	5	CLO-1	PLO-2	5	6	CLO-2	PLO-4	5	7	CLO-2	PLO-3	5	8	CLO-4	PLO-4	15	9	CLO-3	PLO-2	5	10	CLO-3	PLO-3	5	11	CLO-3	PLO-3	5	12	CLO-3	PLO-3	5	13	CLO-3	PLO-3	5	14	CLO-3	PLO-3	5
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	<table border="1"> <tr> <td>15</td> <td>CLO-3</td> <td>PLO-3</td> <td>5</td> </tr> <tr> <td>16</td> <td>CLO-3</td> <td>PLO-3</td> <td>15</td> </tr> </table> <ul style="list-style-type: none"> Final index is defined as follow: <table border="1"> <thead> <tr> <th>Index</th> <th>Converted Score</th> <th>Score Range</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>4.00</td> <td>$85 \leq A \leq 100$</td> </tr> <tr> <td>A-</td> <td>3.75</td> <td>$80 \leq A- < 85$</td> </tr> <tr> <td>B+</td> <td>3.50</td> <td>$75 \leq B+ < 80$</td> </tr> <tr> <td>B</td> <td>3.00</td> <td>$70 \leq B < 75$</td> </tr> <tr> <td>B-</td> <td>2.75</td> <td>$65 \leq B- < 70$</td> </tr> <tr> <td>C+</td> <td>2.50</td> <td>$60 \leq C+ < 65$</td> </tr> <tr> <td>C</td> <td>2.00</td> <td>$55 \leq C < 60$</td> </tr> <tr> <td>D</td> <td>1.00</td> <td>$40 \leq D < 55$</td> </tr> <tr> <td>E</td> <td>0.00</td> <td>$0 \leq E < 40$</td> </tr> </tbody> </table> 	15	CLO-3	PLO-3	5	16	CLO-3	PLO-3	15	Index	Converted Score	Score Range	A	4.00	$85 \leq A \leq 100$	A-	3.75	$80 \leq A- < 85$	B+	3.50	$75 \leq B+ < 80$	B	3.00	$70 \leq B < 75$	B-	2.75	$65 \leq B- < 70$	C+	2.50	$60 \leq C+ < 65$	C	2.00	$55 \leq C < 60$	D	1.00	$40 \leq D < 55$	E	0.00	$0 \leq E < 40$
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Forms of Media	Slides and LCD projectors, whiteboard																																						
Literature	<ol style="list-style-type: none"> Kemdikbud. 2016. BS IPA SMP K13. Jakarta: Kemdikbud. NRC. 2012. National Science Education Standards. Washington: NAP. Rutherford, F.J. & Ahlgreb, A. 1990. Science for All American. New York: Oxford University Press. Suryanti, Mintohari, Widodo, W. 2004. Pengembangan Pembelajaran IPA. Surabaya: Unesa University Press. Tim MIPA Unesa. 2007. Sains Dasar. Surabaya: Unesa University Press. Trefil, J.E. 2016. The Sciences: An Integrated Approach, 8th Edition. John Wiley & Sons. Neser, L. 2022. Introduction to earth science. Virginia Tech Department of Geosciences in association with Virginia TechPublishing 																																						
Note	Based on the regulation of the minister of education and culture of Indonesia number 3 of 2020 concerning national higher education standards, it is state 1 CU equals to 170 minutes per week. Therefore, in one semester (16 weeks, including midterm a final exam) $1 \text{ CU} = 170 \times 16 = 2.720$ minutes or 45.3 hours. Therefore, workhours in 144 CU $\times 45.3$ hours = 6.523,2 hours. Unesa decided that 1 ECTS with 144 CU, $6.523,2/229 \text{ ECTS} = 28.48$ hours, so that 1 CU = 1.59 ECTS																																						