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 :	*Kajian Sains Biologi IV/* *Study of Biological Science IV*)*
Module level :	*Master Program of Science Education*
Course Code :	*8410103091*
Abbreviation, if applicable:	*-*
Courses included in the module, if applicable:	*Not Applicable*
Semester/Term	*1st /Second Year*
Module coordinator(s)	Prof.Dr. Muslimin Ibrahim, M.Pd
Lecturer(s):	Prof.Dr. Muslimin Ibrahim, M.Pd Prof. Dr. Prabowo, M.Pd
Language:	*Indonesian Language*
Classification within the curriculum:	*Compulsory/ ~~Elective~~*
Teaching format/class hours per week during the semester:	*3 contact hours of lectures (Indonesia credit semester or CU*)*
Workload :	*3 x 50 minutes lectures, 3 x 90 minutes structured activity, 3 x 100 minutes individual activity, 14 weeks per semester, 168 total hours per semester ~ 6.72 ECTS***
Credit Point:	*3 CU (6.72 ECTS)*
Requirements:	
Learning goals/competencies:	**Knowledge (KNO-2)** **CLO-1** *Mastering concepts about genetics according to the development of science and technology through molecular.* *CLO-2* *Mastering knowledge and technology molecular genetics problems applying process and or interaction skills approaches* **Comptency (COM-3)** *CLO-3* *Design and creating , developments that are beneficial to molecular genetics independently and in groups.*
Content	*This course provide knowledge about genetics with an emphasis on molecular genetics as well as related aspects, covering the scope of genetics; the structure of genetic matter; reproduction of genetic matter; the work of genetic material; changes in genetic material, genetic material in populations, engineering of genetic matter (an application of microbiology in kahidupan). Included in the study is the concept of biotechnology and its application in everyday life, therefore basic knowledge about the life of*

<table>
<tr><td></td><td>microorganisms which includes characteristics, breeding, growth and metabolism is also the subject of study as a basic study of understanding biotechnology.</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. Ibrahim Muslimin. 2018. Materi Genetik: Tinjauan pada Level Molekul, Surabaya: Joudar Press.
2. Brandenberg, Oliver, Sensi Alessandra, Ghos, Kakoli, Sonnini, Andrea. 2011. Introduction of Molecular Biology and Genetics Engeenering. Rome: Food and Agriculture Organization of The United Nation Rome
3. Ekinci, Deniz (ed). 2015. Biotechnology. In Tech Has Received Trustes
4. Lyons, Robert H. Molecular Biology Glossary. Michigan: Michigan University
5. Scheleif, Robert F. 1993. Genetics and Molecular Biology- 2nd Edition. Baltimore: AddisonWesley Publishing Company.</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
**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</td></tr>
<tr><td>Last Amendment</td><td>5 January 2023</td></tr>
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