Module Descriptions

Module designation	Ecotoxicology *Ekotoksikologi*
Course Code	8420502086
Semester/Term	7th Semester
Person responsible for the module	Prof. Dr. Fida Rachmadiarti, M.Kes. Dra. Herlina Fitrihidajati, M.Si.
Language	Bahasa Indonesia (Indonesian language)
Relation to curriculum	Elective course
Teaching methods	Lecture
Workload	a. Lecture 1 x 50 minutes lectures, 1 x 60 minutes structured activity, 1 x 60 minutes individual activity, 14 weeks per semester, 39.67 total hours of lecture per semester ~ 1.59 ECTS b. Lab activity: 1x170 minutes lab activity, 14 weeks per semester 39.67 total hours of lab activity per semester ~ 1.59 ECTS Total of lecture and lab activity= 79.33 total hours per semester ~ 3.18 ECTS**
Credit Point	2 CU(3.18 ECTS)
Required and recommended prerequisites for joining the module	Ecology, Animal Physiology, and Plant Physiology
Module Objectives/intended learning outcomes	After taking this course, students will be: 1. Able to apply biological knowledge and technology for solving problems of natural resources and the environment both in the laboratory and in real practice that supports the profession and / or entrepreneurship (Knowledge) 2. Be able to demonstrate the basic principles of software applications and instruments, standard analysis methods, and synthesis in biology (Knowledge) 3. Able to design and conduct experiments in the field of biology, manage, analyze, interpret, document, and store research data, to manage living natural resources (Special competences) 4. Be able to apply transferable skills in biology to develop ecopreneurship (eco-innovation, eco-opportunity, eco-commitment (Special competences) 5. Able to apply logical, critical, systematic, and innovative thinking in the context of developing or implementing

<table>
<tr><td></td><td>science and / or technology in accordance with their field of expertise (General competences)
6. Able to work independently, responsibly, both as individuals and in groups, and able to work together (Attitudes)</td></tr>
<tr><td>Content</td><td>This course studies the scope of environmental toxicology through understanding the basic concepts of toxicology, toxicometry, ecological and toxicological pathways, the dynamics of toxic substances in the environment, biotransformation and toxicity testing, and toxicological research through theory and practice. In this case the material is presented in the form of theory and practice.</td></tr>
<tr><td>Study and examination requirements and forms of examination</td><td>Students are eligible for the final semester test if they have at least 75% attendance in class.

The final grade (NA) is calculated based on the following ratio:

<table>
<tr><td>Assessment Components</td><td>Percentage of contribution</td></tr>
<tr><td>Participation</td><td>20%</td></tr>
<tr><td>Assignment</td><td>30%</td></tr>
<tr><td>Mid-semester test</td><td>20%</td></tr>
<tr><td>Final semester test</td><td>30%</td></tr>
</table>

Grade Conversion of 0-100 scale into 0-4 scale is set as below:

<table>
<tr><td>Letter</td><td>Number</td><td>Grade interval</td></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>
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</td></tr>
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	E	0.00	0 ≤ E < 40
Reading List	1. Fitrihidajati, H., Rachmadiarti, F., Khaleyla, F., dan Kustiyaningsih, E. 2020. Effectiveness of Sagittaria lancifolia as Detergent Phytoremediator. Nature Environment and Pollution Technology: Vol. 19 (4) : 1723 – 1727. 2. Frank C. Lu. 2006. Basic Toxicology. Washington: Hemisphere Publishing Corporation. 3. Rachmadiarti, dkk. 2016. Pemetaan Asam Amino dan Rhizobakteri Semanggi dan Kiambang yang terpapar logam Pb. Surabaya: LPPM Unesa. 4. Rachmadiarti, Fida., Fitrihidajati, Herlina. 2017. Ekotoksikologi. Surabaya: Unesa University Press. 5. Sembel, Dantje T., 2015. Toksikologi Lingkungan. Yogyakarta: Andi Press. 6. Siwiendrayanti, Arum, Eram Tunggul Pawenang dan Evi Widowati. 2016. Toksikologi. Semarang: Cipta Prima Nusantara. 7. Soemirat, Juli dan Herto Dwi Ariesyadi, 2015. Toksikologi Lingkungan. Yogyakarta: UGM Press. 8. Walker, C.H, R.M. Sibly, S.P.Hopkin, D.B. Peakall. 2016. Principles of Ecotoxicology Fourth Edition. London: CRC Press. 9. Walker, C.H. 2017. Principles of Ecotoxicology Fourth Edition. London: CRC Press.		