

Module Handbook

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| Modul Name | Soil Biology |
| Modul Level | Bachelor |
| Abbreviation, if applicable: | BIU 307 |
| Sub--heading, if applicable: | - |
| Courses included in the module, if applicable: | - |
| Semester | Even |
| Module Coordinator | Sucipto Hariyanto |
| Lectures | Sucipto Hariyanto Tini Surtiningsih |
| Language | Bahasa Indonesia |
| Classification within the curriculum: | Compulsory Course / Elective Studies |
| Teaching format/ class hours per week during semester | 300 minutes/ week |
| Workload per semester | 100 min lecture + 100 min structural assignment + 100 min self-assignment x 13 weeks; total 3900 min = 65 hours 65/25 = 2.6 ECTS |
| Credit point | 2 |
| Requirements | - |
| Learning goals/competencies | <p>General Competence (knowledge)</p> <p>Students are able to describe the soil organisms, understand the role of living organisms in the soil of the physical properties and chemical properties, showing the influence of microbes in agriculture and bioremediation, and shows the relationship activity of soil organisms and their effects on ecosystem functioning correctly.</p> <p>Specific Competence</p> <ol style="list-style-type: none"> 1. Students are able to understand the scope of soil biology and the function of soil as the habitat of living organism 2. Explaining the physical and chemical character of soil 3. Explaining the definition, classification, and ecology of the soil animal 4. Explaining the role of animal living in the soil 5. Explaining Annelida and termite 6. Explaining the concept of carbon, nitrogen, and energy circle 7. Understanding the sampling methods of soil animal and quantifying the animals 8. Explaining microflora 9. Explaining the interaction of plant and microorganism 10. Explaining about mycorrhiza, nitrogen fixation, and its application on farming field 11. Explaining the process of enzyme, substrate, and carbon in the soil 12. Explaining about bioremediation of soil pollution. |
| Content | The scope of the study of organisms that live in the soil (soil biota), determine the role of soil organisms as biotic environmental factors on the characteristics of the soil (mineral cycle, the transformation of organic material). Physical and chemical properties of soil and the role of soil organisms on soil physical and chemical properties. Activity of the organism and its role both |

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| | symbiotic or non-symbiotic, and their effects on ecosystem function. Microbial influence on agriculture and the use of microbes in bioremediation. |
| Soft skill Attribute | Discipline and Argumentation |
| Study/ exam achievements | <p>Students are considered to be competent and pass if at least get 40% of maximum. Final score (NA) is calculated as follow: Paper project (20%), quiz (10%), mid exam (30%), final exam (30%), and soft skill (10%)</p> <p>Final index is defined as follow:</p> <p>A : 75 - 100 AB : 70 - 74.99 B : 65 - 69.99 BC : 60 - 64.99 C : 55 - 59.99 D : 40 - 54.99 E : 0 - 39.99</p> |
| Form of media | LCD |
| Learning Method | Class and discussion |
| Literature | <p>a. Fatima, M.S., Bignell, D.E., and H.E. Jeroen (2008). A Handbook of Tropical Soil Biology, Stylus Pub Lic.</p> <p>b. Gobat, JM., Aragno, M., Matthey, W., and V.A.K. Sarma (2004), The Living Soil: Fundamentals of Soil Science and Soil Biology, Science Pub Inc.</p> |
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