

Module Handbook

Module Name:	Environment Microbiology
Module Level:	Bachelor
Abbreviation, if applicable:	BIM303
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/term:	Odd
Module coordinator(s):	Dr. Ni'matuzzahroh
Lecturer(s):	Drs. Agus Supriyanto, M.Kes Dr. Ni'matuzzahroh
Language:	Indonesian language
Classification within the curriculum	Compulsory Course / Elective Studies
Teaching format / class hours per week during semester:	300 minutes/ week
Workload:	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) Students are able to elaborate diversity and role of microbes in environment</p> <p>Specific competence</p> <ol style="list-style-type: none"> 1. Students are able to elaborate diversity of microbes ecosystem 2. Students are able to elaborate the interaction of microorganism in environment 3. Students are able to conclude the role of microbes in water and sediment 4. Students are able to elaborate the diversity of marine microbes and role of marine ecosystem 5. Students are able to elaborate the diversity and role of air microbe 6. Students are able to elaborate the role of soil microbes 7. Students are able to elaborate the role of plant microbes 8. Students are able to elaborate the diversity of microbes in extreme environment and their role in environment 9. Students are able to elaborate the type and potential of pathogen microbes cause disease in organism 10. Students are able to elaborate the potential of microbes as disease vector 11. Students are able to conclude the role of microbe in immunity and infection mechanism

	<p>12. Students are able to conclude the role of microbes in biodegradation of pollutants</p> <p>13. Students are able to elaborate the role microbes in microbial control</p>
Content	the diversity of microbial ecosystem, interaction of microorganism and environment, soil microbes, plant microbes, microbial water, and sediment, air microbes, marine microbes, microbes of extreme environment, pathogen microbes, pollutant microbes, disease vector, immunity and infection, and biological control by microbes.
Soft skill Attribute	Dicipline, team work and communication
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: 20% (structural assignment + soft skill) + 40% mid exam + 40% final exam</p> <p>Final index is defined as follow:</p> <p>A : 75 - 100</p> <p>AB : 70 - 74.99</p> <p>B : 65 - 69.99</p> <p>BC : 60 - 64.99</p> <p>C : 55 - 59.99</p> <p>D : 40 - 54.99</p> <p>E : 0 - 39.99</p>
Form of media	Slides and LCD projectors, whiteboards
Learning Method	Lectures, assignments and group discussions
Literature	<p>a. Alexander, M. 1976. <i>Introduction to Soil Microbiology</i>. John Wiley & Son.</p> <p>b. Atlas, R.M. 1990. <i>Microbiology Fundamental and Aplication</i>. Mac Millan Publishing Company, N.Y. and Collier Mac Millan Publishers, London.</p> <p>c. Lynch, J.M. & Poole, N.J. 1979. <i>Microbial Ecology A Conceptual Approachs</i>. Blackwell Scientific Publications.</p> <p>d. Varnam, Allan, H. 2000. <i>Environmental Microbiology</i>. Masson. London</p>
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