

Module Handbook

Module Name:	Applied Microbiology (Practical Work)
Module Level:	Bachelor
Abbreviation, if applicable:	BIN302
Sub-heading, if applicable:	-
Courses included in the module, if applicable:	-
Semester/term:	Even
Module coordinator(s):	Drs. Agus Supriyanto, M.Kes.
Lecturer(s):	Dr. Ni'matuzahroh; Prof. Dr. Ir. Tini Surtiningsih, DEA; Drs. Agus Supriyanto, M.Kes.; Tri Nurhariyati, S.Si., M.Kes.; Dr. Fatimah, M.Kes
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	1
Requirements	General Microbiology
Learning goals/competencies	<p>General competence (skill) Students are able to carry out and prove the fermentation process in the food area, industrial, and waste treatment microbiologically</p> <p>Specific Competence</p> <ol style="list-style-type: none"> 1. Students are able to carry out the principles of and prove the process of enzyme fermentation 2. Students are able to carry out and prove the process of organic acid fermentation 3. Students are able to carry out and prove the process of antibiotic fermentation 4. Students are able to carry out and prove the process of hormone fermentation 5. Students are able to carry out and prove the process of biopolymer fermentation 6. Students are able to carry out the process of ethanol fermentation 7. Students are able to carry out the process of amino acid fermentation 8. Students are able to carry out the process of fermentation of organic acids by microbes 9. Students are able to carry out antibiotics by microbial fermentation

	<p>10. Students are able to carry out the vitamin by microbial fermentation</p> <p>11. Students are able to carry out biopolymers by microbial fermentation</p> <p>12. Students are able to carry out the process by microbial biotransformation</p> <p>13. Students are able to carry out the process of bioleaching microbes</p> <p>14. Students are able to do process of formation of biogas from the microbial activity</p>
Content	Enzyme fermentation, organic acid, antibiotic, hormone, biopolymer, ethanol, amino acid, biosurfactant, production of biogas, production of single cell protein, and management waste microbiologically
Soft skill Attribute	Dicipline and team work
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%), mid exam (30%), Final exam (40%), soft skill (10%)</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	Laboratory equipment
Learning Method	Practical work and Discussion
Literature	<p>a. Mulyono J.R., Gumbira S.E., Hartoto. L. 1989. <i>Biokonversi</i>. Departemen Pendidikan dan Kebudayaan DIKTI, PAN. Bioteknologi IPB.</p> <p>b. Luckner, Martin. 1984. <i>Secondary Metabolism in Microorganisms, Plants and Animal</i>. Springer-Verlag. Berlin, Heidelberg, New York, Tokyo.</p>
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