



THE MODULE HANDBOOK

FACULTY OF BIOLOGY

Industrial Microbiology

Module code	BIO 50505
Module level	Undergraduate
Abbreviation, if applicable	-
Sub-heading, if applicable	-
Courses included in the module, if applicable	-
Semester/ term	Odd
Module coordinator(s)	Prof. Dra. Endang Sutariningsih Soetarto, M.Sc., Ph.D.
Lecture(s)	1. Dr. Miftahul Ilmi, S.Si., M.Si. 2. Sari Darmasiwi, S.Si., M. Biotech.
Language	Indonesia
Classification within the Curriculum	Elective
Teaching format/ class hours per week during the semester	1. This course is organised into a single class and planned to have 13 to 14 teaching weeks and 2-3 weeks of examination. 2. The course is delivered in class once a week for 2 hours using a mixture between teacher centered and student centered learning style. Active discussion is encouraged.
Workload	Estimated working hour: 7 hours/week.
Credit points	2-1 credits
Requirements	Microbiology (BIO 40501)
Learning goals/ competencies	1. Course participants are able to isolate, screen, and do strain improvement of metabolite-producing microorganisms. 2. Course participants are able to do microbial cultivation and fermentation 3. Course participants are able to use appropriate method to recover and purify fermentation product 4. Course participants are able to explain industrial waste management using microbial activity
Content	The course will discuss about: 1. Importance of microorganisms in industry 2. Microbial characteristic for industrial application



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	<ol style="list-style-type: none">3. Isolation, selection, and identification of industrial microorganisms4. Factors effecting productivity of industrial microbes
Study/ exam achievements	Midterm: 20 % Final Examination: 40 % Presentation, attendance, and class activity: 25 % Laboratory exercise: 25 %
Forms of media	White board, LCD, online materials, laboratory equipments
Literature	<ol style="list-style-type: none">1. Madigan MT, Martinko JM, and Parker J., 2000. Brock Biology of Microorganisms. Prentice International Inc2. Okafor N, 2007, Modern Industrial Microbiology and Biotechnology. CRC Press3. Prescott SC, and Dunn CG, 2010. Industrial Microbiology . McGraw-Hill Co New York4. Soetarto ES, Sembiring L, Suharni TT, dan Nastiti SY. 2010. Petunjuk Praktikum Mikrobiologi. Laboratorium Mikrobiologi UGM5. Suharni TT, Nastiti SY, and Soetarto ES, 2010. Mikrobiologi Umum. Universitas Atma Jaya, Yogyakarta.6. Waites MJ., Morgan NL. , Rockey JS, and Higton G, 2012. Industrial Microbiology: An Introduction, John Wiley & Sons, Inc.