



THE MODULE HANDBOOK
DOCTOR BIOLOGICAL SCIENCES STUDY PROGRAM
FACULTY OF BIOLOGY

SELECTED TOPIC FOR DISSERTATIONS

Microbiological Analysis of Food

Course code	BIDB243052
Course level	Doctoral Program
Semester/ term	Odd/even
Course coordinator	Sari Darmasiwi, S.Si., M. Biotech., Ph.D.
Lecture(s)	Sari Darmasiwi, S.Si., M. Biotech., Ph.D.
Language	Indonesian/English
Classification within the Curriculum	Compulsory Specialization Courses
Teaching format/ class hours per week during the semester	This course is planned to have 14 teaching weeks and 2 weeks of examination.
Workload	1,125 hours/day 5 days/week 5,625 hours/week 16 Weeks/Semester total workload : 90 hours/3,6 ECTS
Credits	3.6 ECTS
Requirements	-
Program Learning Outcome	CPL 1.1. Upon completing this program, the graduates demonstrate an attitude of being able to contribute to improving the quality of life in society, nation and state, and the progress of civilization based on Pancasila CPL 2.2. After attending this program, graduates demonstrate an understanding of substantial and leading theory in the field of biology/biological resources in order to support education for sustainable development CPL 3.2. After completing this program, the graduates will be able to contribute to the development and practice of the field of biology through scientific research based on scientific principles and ethics through interdisciplinary, multidisciplinary, or transdisciplinary approaches in solving problems in the field of biology CPL 4.1. After participating in this program, graduates will be able to propose new solutions or recommend proposed solutions to solve biological resource problems in a sustainable



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	manner through an interdisciplinary or multidisciplinary approach to fund deduction or induction
Course Learning Outcome	BIDB243052.1 By the end of this course, students will be able to demonstrate good practices in food microbiology research, including standards, risks, and food safety BIDB243052.2 By the end of this course, students will be able to explain the types of spoilage, indicator, and pathogenic microorganisms in food BIDB243052.3 By the end of this course, students will be able to select appropriate methods for examining food materials and identify damage or diseases caused by microorganisms in food. BIDB243052.4. By the end of this course, students will be able to explain methods of controlling microorganisms in food
Course Description	This course explained the fundamentals of food microbiology laboratories, food safety, and associated risks. It examines microbial interactions with food materials, including indicator microorganisms and foodborne pathogens. Topics include sampling methods for microbiological analysis of food and processing environments; enumeration of specific microorganisms in food (bacteria and fungi); identification of food spoilage microorganisms; identification of foodborne pathogenic microorganisms (bacteria and fungi); determination of microbial activity; and methods for controlling foodborne microorganisms through physical, chemical, and biological approaches
Assessments	The assessment for Selected Topic for Dissertations (Microbiological Analysis of Food) is based on five components, with the respective criteria and weights: A. Participatory Activity (20%) B. Project result/Study case result/PBL Result (25%) C. Assignment (25%) D. Mid-term Exam (15%) E. Final-term Exam (15%)
Study Media and Literature	Main: 1. Yousef, A. E., Waite-Cusic, J. G., & Perry, J. J. (2022). Analytical food microbiology: A laboratory manual. John Wiley & Sons. 2. Torre, L. S., Aguilar, C. N., Kannan, P., & Haghi, A. K. (Eds.). (2022). Quantitative Methods and Analytical Techniques in Food Microbiology: Challenges and Health Implications. CRC Press. 3. Erkmen, O. (2021). Microbiological analysis of foods and food processing environments. Academic Press.



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additional:

4. Adam, M.R., M.O.Moss (eds). 2016. Food microbiology. 4th ed. The Royal Society of Chemistry, Cambridge.
 5. Jay, J.M., M.J. Loessner, D.A. Golden. 2005. Modern food microbiology. 7thed. Springer, New York.
 6. Ray, B. 2013. Fundamental food microbiology. 5th ed. CRC Press, Boca Raton.
 7. Al Bulushi, I. M. (2017). The handbook of food microbiological analytical methods. Nova Science Publishers, Inc..
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