Module Handbook of Traditional Fermented Food of Indonesia

(International Class)

Module designation	This course is an English-language introductory course aimed for international students and students of the Faculty of Agriculture. This course discusses and introduces aspects of microbiology and biotechnology in the process of making traditional fermented foods in Indonesia
Semester(s) in which the module is taught	Third/Fifth Semester
Person responsible for the module	Nur Akbar Arofatullah, M. Biotech., Ph.D.
Language	English Language
Relation to curriculum	*Elective Course*
Teaching methods	Lecture are conducted in the class with 30-40 students. In every meeting, there will be delivered interactive lecture and discussion. In some topics there will be quizzes, individual and/or group assignment. Details: 1. Lectures 2. Assignment (Individual and Group) 3. Discussion 4. Midterm 5. Final Exam
Workload (incl. contact hours, self-study hours)	- Lectures = 2 SKS x 50 minutes x 16 meetings = 1.600 minutes = 26,67 hours = 26,67 hours/27,1 hours = 0,98 ECTS - Assignment = 2 SKS x 60 minutes x 16 meetings = 1.920 minutes = 32 hours = 32 hours/27,1 hours = 1,18 ECTS - Self Study = 2 SKS x 60 minutes x 16 meetings = 1.920 minutes = 32 hours = 32 hours/27,1 hours = 1,18 ECTS Total Workload = 3,34 ECTS
Credit points	*2/0 Credit Points*
Required and recommended prerequisites for joining the module	*None*

Module objectives/intended learning outcomes	*Program Learning Outcomes (PLO):* *PLO1: Able to implement science and technology in the field of agricultural microbiology in order to produce solutions, ideas, compile scientific descriptions of the results of their studies and be able to use at least one international language for oral and written communication.* *PLO2: Able to explain theoretical concepts of biology microorganism and develop microbial-based technology to increase plant production and environmental services.* *PLO3: Able to identify, design, implement and solve problems that arise in the field of microbiology to provide suggestions for solutions in the industrial and agricultural fields* *Course Learning Outcomes (CLO):* *CLO1: Students are able to explain the diversity, history and purpose of making traditional fermented foods in Indonesia.* *CLO2: Students are able to explain the microbiology and biotechnology processes in making traditional fermented foods* *CLO3: Students are able to express ideas and write down their ideas, as well as present the results of their thoughts using international language (English) well.*
Content	1. *Introduction to traditional fermented food of Indonesia (1 meeting)* 2. *Diversity of Traditional Fermented Food of Indonesia (1 meeting)* 3. *Microbiology of Traditional Fermented Food of Indonesia (1 meeting)* 4. *Quality and Safety of Traditional Fermented Food (1 meeting)* 5. *Health-related Issues of Traditional Fermented Product (1 meetings)* 6. *Cereal-based Traditional Fermented Food of Indonesia (1 meeting)* 7. *Fruit and Vegetable Based Fermented Food of Indonesia (1 meeting)* 8. *Roots and Tuber Based Fermented Food of Indonesia (1 meeting)* 9. *Traditional Fermented Food Involving Acid Fermentation (1 meeting)* 10. *Acetic Acid Fermented Food Product (1 meeting)* 11. *Health Promoting Lactic Acid Bacteria in Traditional Fermented Food of Indonesia (1 meeting)* 12. *Indigenous Fermented Foods: Fermented Meat Products, Fish and Fish Products, Alkaline Fermented Foods, Tea, and Other Related Products (1 meeting)* 13. *Biotechnology and Traditional Fermented Food (1 meeting)* 14. *Metabolomic Based Study of Tempe (1 meeting)*

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<tr><td>Examination forms</td><td>High Order Thinking Skills Examination
<table><tr><th colspan="4">Grade and Score</th></tr><tr><th>Grade</th><th>Score</th><th>Grade</th><th>Score</th></tr><tr><td>A</td><td>≥ 85</td><td>C+</td><td>64,0-66,9</td></tr><tr><td>A-</td><td>82,0-84,9</td><td>C</td><td>61,0-63,9</td></tr><tr><td>A/B</td><td>79,0-81,9</td><td>C-</td><td>58,0-60,9</td></tr><tr><td>B+</td><td>76,0-78,9</td><td>C/D</td><td>55,0-57,9</td></tr><tr><td>B</td><td>73,0-75,9</td><td>D+</td><td>52,0-54,9</td></tr><tr><td>B-</td><td>70,0-72,9</td><td>D</td><td>49,0-51,9</td></tr><tr><td>B/C</td><td>67,0-69,9</td><td>E</td><td><49</td></tr></table></td></tr>
<tr><td>Study and examination requirements</td><td>To be able to take the final exams, the minimum of student attendance is 70% out of effective meetings. From 14 meetings, students must take a minimum of 10 meetings to take the exam.</td></tr>
<tr><td>Reading list</td><td>Main References:
Indigenous Fermented Foods of South Asia, V.K. Joshi (2015), CRC Press, USA.
Ethnic Fermented Foods and Alcoholic Beverages of Asia, J.P. Tamang (2016), Springer, India.
Handbook of Indigenous Fermented Foods, Revised and Expanded, Keith Steinkraus (2018), CRC Press, USA.
Additional References
Interactive video about fermentation from YouTube</td></tr>
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