



Module Description Application of Food Safety and Microbiology

Module designation	Application of Food Safety and Microbiology
Module code	23G03121202
Semester(s) in which the module is taught	3 rd semester
Person responsible for the module (lecturers)	❖ Arfina Sukmawati Arifin, S.TP., M.Si ❖ Dr. Ir Andi Hasizah, M.Si ❖ Dr. Fitri, S.TP
Language	Indonesian language
Relation to curriculum	Compulsory course
Teaching methods	Laboratory practice
Workload	Total workload (estimated): 91 hours of practicum
Credit points	2 credit points = 3.24 ECTS
Required and recommended prerequisites for joining the module	
Module objectives/ Intended Learning Outcomes (ILO)	ILO 3. Demonstrates effective communication of scientific knowledge both verbally and in written form, adhering to academic and professional standards (S) ILO 6. Identifies microorganisms in food ingredients and processed foods, including applications in biotechnology (C3) CLO 1. Able to explain the principles of using tools and procedures for basic food microbiology preparation in the laboratory (media making, multilevel dilution, sterilization, inoculation techniques, and isolation) CLO 2. Able to analyze and characterize qualitatively and / or quantitative microbiology testing and food safety in food in the Food Microbiology Laboratory
Content	❖ Basic microbiology: Introduction to equipment, media making, sterilization, dilution, inoculation techniques, isolation techniques, and enumeration ❖ Analysis of the level of sanitation of the microbiology laboratory work environment



	❖ Qualitative and quantitative analysis of coliform bacteria using the most probable number (MPN) method in drinking water ❖ Characterization of microbial spoilage of fresh food materials ❖ Qualitative and quantitative analysis of food microbes using the cup counting method ❖ Analysis of total microbial contamination in drinking water using micro membranes																														
Examination form	Writing (essay)																														
Study and examination requirements	Examination requirements: Attendance above 80% ❖ Preliminary task: 15% ❖ Practicum response: 20% ❖ Final report of practicum: 40% ❖ Quiz: 25% Grading: <table><tr><th>Numerical range</th><th>Letter grade</th><th>Conversion value</th></tr><tr><td>85 - 100</td><td>A</td><td>4.00</td></tr><tr><td>80 - < 85</td><td>A-</td><td>3.75</td></tr><tr><td>75 - < 80</td><td>B+</td><td>3.50</td></tr><tr><td>70 - < 75</td><td>B</td><td>3.00</td></tr><tr><td>65 - < 70</td><td>B-</td><td>2.75</td></tr><tr><td>60 - < 65</td><td>C+</td><td>2.50</td></tr><tr><td>50 - < 60</td><td>C</td><td>2.00</td></tr><tr><td>40 - < 50</td><td>D</td><td>1.00</td></tr><tr><td>< 40</td><td>E</td><td>0.00</td></tr></table> <i>If student(s) receives(s) a score below 40, student(s) must retake the course</i>	Numerical range	Letter grade	Conversion value	85 - 100	A	4.00	80 - < 85	A-	3.75	75 - < 80	B+	3.50	70 - < 75	B	3.00	65 - < 70	B-	2.75	60 - < 65	C+	2.50	50 - < 60	C	2.00	40 - < 50	D	1.00	< 40	E	0.00
Numerical range	Letter grade	Conversion value																													
85 - 100	A	4.00																													
80 - < 85	A-	3.75																													
75 - < 80	B+	3.50																													
70 - < 75	B	3.00																													
65 - < 70	B-	2.75																													
60 - < 65	C+	2.50																													
50 - < 60	C	2.00																													
40 - < 50	D	1.00																													
< 40	E	0.00																													
Reading list	1. Black, Jacquelyn G. 2008. Microbiology: Principles and Explorations, Seventh Edition. USA: John Wiley & amp; Sons, inc 2. Mossel, C.M.L. Marengo (Auth), P.D.Patel (Eds.). 1995. Rapid Analysis Techniques in Food Microbiology. Springer 3. Ray, Bibek. 2005. Fundamental Food Microbiology (Third Edition). Taylor & amp; Francis E-Library																														



	4. Hafsar. 2014. Mikrobiologi Analitik. Makassar: Alauddin University Press. 5. Wibowo, S., Noorahman N. F., Sandriya A. 2024. Teknik Laboratorium Mikrobiologi. Jambi: PT. Sonpedia Publishing Indonesia.
Date of last amendment	2 Agustus 2025