



AYDIN ADNAN MENDERES UNIVERSITY
GRADUATE SCHOOL OF HEALTH SCIENCES
VETERINARY FOOD HYGIENE AND TECHNOLOGY
FOOD HYGIENE AND TECHNOLOGY (VETERINARY)
FOOD HYGIENE AND TECHNOLOGY (VETERINARY) MASTER
COURSE INFORMATION FORM

Course Title	Food Microbiology Laboratory Principles								
Course Code	VBH563	Course Level			Second Cycle (Master's Degree)				
ECTS Credit	3	Workload	75 (Hours)	Theory	1	Practice	2	Laboratory	0
Objectives of the Course	Microbiological cultivation methods, problems encountered in the lab, counting colony and learn to evaluate data obtained from microbial analysis								
Course Content	Microbiological cultivation techniques, counting methods of bacteria and colony and to be evaluated of the counting.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Experiment, Demonstration, Discussion, Individual Study, Problem Solving								
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Gıda mikrobiyolojisi ve uygulamaları
2	Gıdaların Mikrobiyolojik Analizleri
3	Ünlütürk, A, Turantaş, B. Gıdaların Mikrobiyolojik Analizi
4	Koneman's Color Atlas and Textbook of Diagnostic Microbiology
5	Bergey's manual of systematic bacteriology
6	Collins and Lyne's Microbiological Methods 8th Edition

Week	Weekly Detailed Course Contents	
1	Theoretical & Practice	General rules, Introduction to food microbiology laboratory & Preparation before microbiological cultivation, sterilization, microbiological sampling methods
2	Theoretical & Practice	Dilution Preparation, Cultural Counting Methods & Media preparation, media pouring
3	Theoretical & Practice	Contamination Sources (Air Sampling, Swab Removal) and Microbiological Sampling & Pre-enrichment applications from food, dilution preparation in food microbiology laboratory
4	Theoretical & Practice	Measurement of Reproduction in Bacteria (Direct and Indirect Methods), Colony Count (Pouring, Spreading, Dropping and Petri Film) & Sowing studies with drop, spreading and pouring plate methods
5	Theoretical & Practice	Searching for Possible Microorganisms in Different Foods Determining the Number of Psychophile, Thermophil, Anaerobic Mesophilic Bacteria & Direct and indirect measurement of microbiological reproduction, Colony count
6	Theoretical & Practice	Coliform Analysis (MPN, Double Layer and Membrane Filtration Technique) & Sowing by MPN method
7	Theoretical & Practice	Coliform analysis & Practice to MPN, double layer planting and membrane filtration technique
8	Intermediate Exam	Midterm exam
9	Theoretical & Practice	Biochemical Analysis - Catalase Test, Imvic Tests, Carbohydrate Fermentation, Tsi Media Test, Oxidase Test & Determination of general live, psychophil microorganism and yeast mold in foods
10	Theoretical & Practice	Bacterial Culture Method, Bacterial Culture Preparation, Evaluation of Counting Data Obtained & Determination of Staphylococci and Micrococci in Foods
11	Theoretical & Practice	Culture Protection Methods & Microscopic examination of microorganisms and gram staining
12	Theoretical & Practice	Paints and dyeing methods used in microbiology & some special painting techniques (sports painting, flagella painting)
13	Theoretical & Practice	Simple staining techniques & Determination of some pathogenic bacteria in foods (Salmonella, L. monocytogenes, S. aureus)
14	Theoretical & Practice	Compound dyeing techniques I & Culture preparation and purification
15	Theoretical & Practice	Compound dyeing techniques II & MIC Microdilution and Macrodilution Preparation and Planting



16	Final Exam	Final exam
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Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	1	0	14	14
Lecture - Practice	2	0	14	28
Midterm Examination	1	11	1	12
Final Examination	1	20	1	21
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = ECTS				3

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Having the necessary theoretical knowledge about the methods of microbiological cultivation
2	To gain the ability to apply microbiological cultivation
3	To learn the most probable number technique
4	Knowledge of counting techniques
5	Learn how to evaluate data obtained from the bacterial counting
6	Conduct an evaluation of a microbiological analysis of a food sample

Programme Outcomes (Food Hygiene and Technology (Veterinary) Master)

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Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5	L6
P3	5	5	5	5	5	5
P9	5	5	3			
P11	5	5	5	5	5	5
P12	5	5	5	5	5	5

