MAHATMA GANDHI UNIVERSITY, KERALA

Abstract

Food Microbiology (Minor) - Fourth Semester - Substitution of course and approval of the syllabus for the same - Approved - Orders issued.

ACA 16

No. 10778/ACA 16/2025/MGU Priyadarsini Hills,Dated: 17.11.2025

Read:-1. U.O. No. 5797/ACA16/2024/MGU, dated. 27.06.2024.

2. Minutes of the meeting of the Expert Committee on Microbiology (UG & PG), dated 06.11.2025.

3. Orders of the Vice Chancellor under Section 10(17), Chapter III of the Mahatma Gandhi University Act 1985, dated. 14.11.2025.

ORDER

The syllabi of various Honours Under Graduate Programmes coming under the MGU-UGP (Honours) Regulations, 2024, have been approved vide paper read as (1) above and published on the website of the University.

The Expert Committee on Microbiology (UG & PG), discussed the need to substitute the course **MG4DSCMBG203 : Foodborne Diseases, Food Sanitation and Food Safety**, with **MG4DSCMBG203 : Food Safety, Food Hygiene and Public Health**, in the **Fourth semester** syllabus and to remove the Course Code **MG4DSCMBG203** from the detailed syllabus of **MG3DSCMBG203 : Foodborne Diseases, Food Sanitation and Food Safety,** in the **Third semester** syllabus of Food Microbiology (Minor) and has submitted recommendations for the same.

(Syllabus for the new course is attached as Annexure.)

Considering the urgency of the matter, the Vice Chancellor, in exercise of the powers of the Academic Council vested upon him under Section 10(17), Chapter III of the Mahatma Gandhi University Act 1985, vide paper read as (3), has approved the above recommendations.

Orders are issued accordingly.

SUDHA MENON J

ASSISTANT REGISTRAR III

(ACADEMIC)

For REGISTRAR

Copy To

1. PS to VC
2. PA to Registrar/CE
3. Convenor, Expert Committee, Microbiology (UG & PG)
4. JR 2 (Admin)/ DR 2, AR 3 (Academic)
5. JR/DR/AR (Exam)
6. Tabulation/Academic Sections concerned
7. IT Cell 3 / OQPM - 1 Sections
8. AC C 1/ AC C 2 Sections
9. P.R.O. /IQAC /Records Sections.
10. Stock File/File Copy

File No: 111085/ACA16-2/2025/ACA 16

Forwarded / By Order

Section Officer

ANNEXURE

Syllabus Index (Modified)

Semester 4

Course Code	Title of the Course	Type of the Course DSC, MDC, SEC etc.	Credit	Hours /week	Hour Distribution / week				Page No.
					L	T	P	O	
MG4DSCMBG203	Food Safety, Food Hygiene and Public Health	DSC	4	5	3	-	2	-	11
MG4SECMBG201	No Change								
MG4VACMBG201									

Mahatma Gandhi University Kottayam

Programme						
Course Name	**Food Safety, Food Hygiene and Public Health**					
Type of Course	DSC C					
Course Code	**MG4DSCMBG203**					
Course Level	**200-299**					
Course Summary	This course provides a comprehensive understanding of food spoilage, food-borne diseases, and food sanitation practices essential for ensuring food safety and public health. The course emphasizes the major microbial and viral food-borne disease and the importance of personal hygiene in preventing outbreaks. Learners will also gain insight into food sanitation principles and procedures, and identification of hazards in food processing environments. The students will familiarize with the national and international food safety standards and their significance in national and international food trade. Through practical sessions, students will learn fundamental microbiological techniques for the isolation, enumeration, and characterization of food-borne pathogens, and participate in field visits to understand the role of quality control (QC) in food industries.					
Semester	**IV**	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		3		1		75
Pre-requisites, if any	A basic understanding of the fundamentals of general/applied/food microbiology					

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	PO No
1	Explain the causes and mechanisms of food spoilage and classify foods based on their spoilage characteristics.	U	1,2
2	Identify major microbial and viral food-borne diseases, their causative agents, symptoms, and preventive measures with emphasis on public health importance.	A	1,2,5,7
3	Describe food sanitation procedures, types of food hazards, and interpret national and international food safety laws and regulations.	U	2,4,5,7
4	Demonstrate basic microbiological techniques for isolation, enumeration, and identification of food-borne pathogens and understand the role of quality control in food safety.	E	2,3,5,7

Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)

COURSE CONTENT

Content for Classroom transaction (Units)

Module	Units	Course description	Hrs	CO No.
1	1.1	Introduction to food spoilage: Definition, Causes of spoilage- microbial, enzymatic, physical, chemical.	3	1
	1.2	Classification of foods based on spoilage and major types of spoilage based on food category- Meat, fish, poultry, milk and vegetables, cereals and bakery products	8	1
	1.3	Spoilage of canned foods-Flat sour spoilage, Thermophilic anaerobe spoilage, Sulfide stinker spoilage, Putrefaction and Hydrogen swell	4	1
2	2.1	Microbial foodborne diseases and public health: Botulism and Staphylococcal food poisoning. Mycotoxicosis.	5	2
	2.2	Major foodborne pathogens and their features- Salmonellosis, *Bacillus cereus* food poisoning, Typhoid fever, Cholera, *E. coli* gastroenteritis, *Vibrio parahaemolyticus* gastroenteritis	5	2
	2.3	Food and waterborne viruses: Hepatitis A virus, Rotavirus, Norovirus. Parasitic foodborne diseases (*Giardia*, *Entamoeba*). Role of personal hygiene in preventing foodborne diseases.	5	2
3	3.1	Factors affecting food safety in the food chain (Farm-to-fork concept). Food hazards- Physical, chemical and biological hazards	4	3
	3.2	Food sanitation and food safety: Cleaning and sanitizing in food industry, Physical and chemical sanitizing agents, Cleaning methods- CIP and COP	5	3
	3.3	National and international food safety laws and systems: HACCP, ISO22000, FSSC 22000, Codex Alimentarius, WHO, FAO, FSSAI, AGMARK, GMP, GHP.	6	3
4	4.1	Practical: Hand swab and surface swab tests for hygiene monitoring. Isolation and identification of foodborne pathogens (*E. coli*, *S. aureus*, *Salmonella*).	8	4
	4.2	Practical: Enumeration of food borne pathogens and their characteristics in selective media Coliform count in milk/water (MPN or MacConkey agar). Detection of fungal contaminants in bread, fruits, or grains.	12	4
	4.3	Activity: Visit to microbiology laboratory/food industry to understand the role of QC	10	4
5		Teacher specific content		

Teaching and Learning Approach

Classroom Procedure (Mode of transaction)

- Direct Instruction: Lecture, Explicit Teaching, E-learning
- Interactive Instruction: Active co-operative learning, Individual/group assignments and discussion, Peer teaching and learning, Quiz, Library work.
- Laboratory instructions: Demonstration of tests and methods, Hands on experiments, Skill acquisition
- Microbiology Lab visit

Assessment Types

MODE OF ASSESSMENT

Continuous Comprehensive Assessment (CCA)

A. CCA for Theory: 25 marks
B. CCA for Practical: 15 marks

Scheme for CCA
Theory

Components		**Marks**
Test (MCQ/Short answer/Long answer) or Quiz		10
Seminar – introduction of topic	2	10
Topic clarity	3	
Presentation skill	3	
Interacting with the audience	2	
*Assignment / an activity		5
Total		25

*Based on Teacher specific content

Practical

Components	**Marks**
Evaluation of practical skill (Test/ Experimentation)	8
Lab involvement	2
Industry visit	5
Total	15

End Semester evaluation (ESE)

C. ESE for theory: 50marks , Duration: 1.5 Hour

Question type	Marks per question	No. of questions	Total marks
Multiple choice Questions	1	10	10
Fill in the blanks questions	1	5	5
True or false questions	1	5	5
One word/very short answer questions	1	10	10
Short answer questions	3	4	12
Long answer questions	8	1	8
Total			**50**

D. ESE for Practical: 35 Marks

Components	Total Marks
Evaluation of Practical skill	25
Record	10
Total	**35**

References

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SUGGESTED READINGS

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2. James M. Jay. (2004). Modern Food Microbiology (4th ed.). CBS Publishers and Distributors, New Delhi.