

Date: 19/06/2023

To,

The Principal,
Vasantdada Patil Arts, Commerce & Science College
Patoda, Dist. Beed.

Sub: To Grant Permission for a Certificate Course in the Department of Microbiology.

Respected Sir.

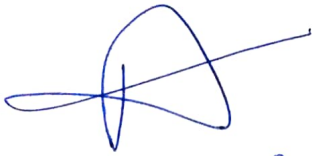
With reference to above cited subject, Department of Microbiology wish to start a Certificate course entitled "Food Microbiology & Food Safety" in the academic year 2023-2024 of 20 students batch with admission fees of Rs. 110/- per student. So I request you to give permission for a certificate course.

Thanking You.



Dr. A.R. Kshirsagar

Head Dept. of Microbiology



19/06/2023



Students Name	
1. DESAI PRATIKSHA SHIVAJI	
2. DHARANE RESHMA SONABA	
3. DHAWDE SURAJ MAHADEO	
4. FUSKE SWAPNIL RATNAKAR	
5. GARJE RUSHIKESH SHIVAJI	
6. GAVALI SUDHIR MANIK	
7. HATAGLE KIRAN DAGDU	
8. JADHAV SACHIN SHASHIKANT	
9. KAWARE ABHIJEET BHARAT	
10. KHADE AMARNATH RAMESH	
11. MALI PRASAD SHIVAJI	
12. MEHETRE RUSHIKESH GANGARAM	
13. MURUKUTE DNYANESHWARI BHIMRAO	
14. PATHAK GAJANAN GIRISHKUMAR	
15. PAWAR PRASAD SANTARAM	
16. RAKH YOGITA SANTOSH	
17. RATHOD VAISHNAVI MACHINDRA	
18. SHINDE MADHURI KAMLAKAR	
19. SONKAMBLE KULDIP TANAJI	
20. YEMALE DNYANESHWARI JAGNNATH	


Head

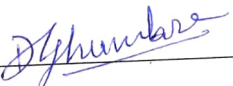
Department of Microbiology
K.P. College, Patoda, Dist. Beed

Certificate Course

Name of Course : Food Microbiology & Food Safety
Course Type : Certificate Course
Duration : 1 Month (40 Hours)
Eligibility : 12th Pass
Capacity in one batch : 20
Medium of course : English
Assessment / Evaluation process: 50 Marks MCQ/ Objectives/ Short Answer type exam

Course Coordinators

Dr. Abhay R. Kshirsagar: 

Dr. Pradeep D. Ghumbre: 

Objectives:

To define microbial food spoilage, food quality, food safety and the factors affecting the growth and control of microorganisms in food.

- To articulate the use of hurdle technology and food preservation in the control of foodborne pathogens in food systems.
- To discuss the principles of food preservations and to describe the different food preservation methods.
- To describe the role of beneficial microorganisms in food processing, preservation and safety, and their potential health benefits.
- To explain the causes of foodborne microbial diseases and predict the pathogens that can grow in any given food during different stages of the food production system.
- To explain the different factors that take place during food processing and how food can be contaminated in the food continuum (pre and post-harvest level)
- To apply rapid microbiology techniques to assess food safety and quality.
- To demonstrate the use of appropriate lab techniques commonly used in the food microbiology laboratory.
- To work effectively as a team in designing and using food microbiology laboratories and in-class activities.

Learning outcome:

Upon successful completion of this course the student will be able to:

- Complete understanding of isolation, characterization of various microbes associated with foods and food groups.
- determine and use the principles of sanitation, heat treatment, irradiation, modified atmosphere, antimicrobial preservative and combination of method (hurdle concept) to control microbial growth
- Familiarize with microbiological techniques for the study of foods.
- Better understanding of methods to detect pathogens in foods.
- This course is also designed to improve student's success skills, especially in oral and written communication, defining a problem, identifying potential causes and possible solutions and making thoughtful recommendations, applying critical thinking skills to new situations, independently researching scientific and non-scientific information, and facilitating group projects.



Head

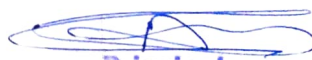
Department of Microbiology
V.P.College, Patoda, Dist.Beed

Syllabus

Sr. No.	Content	Hours
Theory		16 Hours
1.	<p>Chapter 1: Food Microbiology</p> <p>Fundamentals of Microbiology, History and development of microbiology, Scope and importance of food microbiology, Economic importance of yeast, molds and Bacteria, Factors affecting the survival and growth of microorganisms in food.</p> <p>Intrinsic and Extrinsic parameters that affect microbial growth. Intrinsic factors for growth- Generalized, nutrient effect, pH, buffer, anaerobic/aerobic conditions, moisture content, temperature, gaseous atmosphere, Application of microbiology in nutrition</p>	8 Hours
2.	<p>Chapter 2: Food Safety</p> <p>Food sanitation, microbiological criteria and food safety, Food safety objectives (FSO), Bacteriology of Water supplies, Sewage in waste treatment and disposal, Indicators of food microbial quality and safety, some indicators of product quality- Coliforms, Enterococci, Bifidobacterium, Coliphages.</p> <p>Bacterial Food-borne poisoning, infections and intoxication, Non-bacterial food-borne poisoning, infections and intoxication, Microbiological quality standards of food, control and inspection</p>	8 Hours
Practical's		24 Hours
1.	Introduction, Laboratory Safety, Use of Equipment; Sterilization Techniques; Culture Media Types and Use; Preparation of Nutrient broth and agar	4 Hours
2.	Different methods of microbial Examinations: – Procedures of TPC, SPC, Pour plate method, Streaking, Swabbing, Stabbing	4 Hours
3.	Enumeration of Lactic acid bacteria from fermented foods, Yeast and Mold count from fruits	4 Hours
4.	Factors affecting food safety:-physical hazards, biological hazards and chemical hazards, Personal hygiene & sanitation in handling food.	4 Hours
5.	Sanitation & Safety in handling Equipment, Plant constructions, water supply and sewage disposal.	4 Hours
6.	Regulatory & control bodies -FSSAI, GMP, Codex, GRAS, Certifications in Microbiology	4 Hours


Head

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Vasantdada Patil College
Patoda, Dist. Beed.


Principal
Vasantdada Patil College,
Patoda, Dist. Beed.