

# **SYLLABUS**

of the

## **Value-added Course**

**Food-Microbes interactions**

**(MCBHVAC 002)**

(w.e.f. 2022-2023)



**Offered by:**

**THE DEPARTMENT OF MICROBIOLOGY**

**Panskura Banamali College**

**(AUTONOMOUS)**

**Panskura R.S., PurbaMedinipur**

**West Bengal – 721152**

## COURSE INFORMATION IN BRIEF

**Course Name:** Food-Microbes interactions

**Course Contents:** Unit 1 Foods as a substrate for microorganisms , Unit 2 Principles and methods of food preservation, Unit 3 Fermented foods

**Course Type:** Value-added Course  
(Optional, additional, and not a part of the CBCS curriculum)

**Medium:** English

**Mode:** Online

**Intake:** Minimum 20; Maximum 40

**Eligibility:** Microbiology Hons. students from across College

**Duration:** 30 hours (to complete within a time span of 2 months)

**Course Fees:** Rs. 300

**Coordinator:** Kajari Roy, Assistant Professor, SACT

**Contact:** Department of Microbiology , Panskura Banamali College (Autonomous)

**9432685712**

**Objectives:**

1. To establish a link between foods and microbes through the study of microorganisms which have both beneficial and deleterious effects on the quality and safety of raw and processed foods.
2. To assess their (foods) safety to consumers.
3. To get some ideas about stability or shelf life of foods under normal storage.
4. To determine the level of sanitation and safety measures used during handling.

**Outcomes:**

1. Are able to describe the role of microorganisms in the production of foods, it's spoilage, including their role in homemade fermented foods.
2. Are able to identify the roles of microorganisms in the causation of the diseases and how to protect against food-borne pathogens.
3. Are able to perform experimental skills for the assessment of microbial load and quality of food.

**Critical thinking area:**

Is there any scope of applying Recombinant DNA Technology in the field of food industry?

**Syllabus**

**Unit 1 Foods as a substrate for microorganisms**No. of Hours: 10

Natural flora of foods in general, Intrinsic and extrinsic parameters that affect growth and survival of microbes in foods, Source of contamination and principles of microbial spoilage of foods, Food borne diseases (causative agents, foods involved, symptoms, preventive measures), Food sanitation .

**Unit 2 Principles and methods of food preservation**

No. of hours:10

Physical methods of food preservation: Temperature (Low, High), Irradiation, aseptic packaging.

Chemical methods of food preservation: salt-sugar, organic acids, ethylene oxide and bacteriocins.

**Unit 3 Fermented foods**No. of hours:10

Fermented dairy product, fermented vegetable product, fermented meat product.

(Starter culture, production process)