FOOD MICROBILOGY

Sem	Subject Code	Category	Lecture		Theory		Credits
II	21CPFN2D	Elective Paper II	Hrs/sem	Hrs/Per week	Hrs/sem	Hrs/Per week	3
			60	4	60	4	

COURSE OBJECTIVE:

The students will be able to

1. Learn about the morphology of different microorganisms.
2. Study the spoilage caused by microorganisms.
3. Understand the various types of poisoning and infection caused by microorganism.

COURSE OUTCOMES

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	Introduction and classification of Microorganisms	K2
CO2	Food spoilage due to Microbes	K2
CO3	Analyzing and Identifying the Food borne diseases and its ill effects	K3
CO4	Analyzing the Preventive Measures to Control the Microbes	K 2
CO5	Analyzing different Microbial tests and treatments.	K3, K 4

Knowledge level: K1 – Remember, K2-Understand, K3- Apply, K4-Analyse.

MAPPING WITH PO

COS	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	M
CO2	M	M	M	M	S
CO3	S	S	M	M	M
CO4	M	M	S	M	M
CO5	M	S	S	S	S

S-Strong; M-Medium, L- Low

UNIT – I

INTRODUCTION TO MICROORGANISMS **12 Hours**

Food Microbiology – Definition, History and its Scope. General Classification of microorganism, Morphology, Types, Nutrition and Reproduction of yeast, mould, bacteria, virus, algae and protozoa.

UNIT – II

FOOD SPOILAGE **12 Hours**

General principles underlying spoilage of food, Microbial Spoilage of Vegetables, Fruits and their products. Microbial Spoilage of Meat, Egg, Milk, Sea food and their products.Microbial Spoilage of Cereals, Pulses, Nuts, Oil Seeds, Spices, Condiments and their Products.

UNIT – III

FOOD BORNE DISEASES **12 Hours**

Food in relation to disease- food borne disease, food infection, intoxication, microbial toxins- types, bacterial poisoning and infection- causative agents and sources, symptoms and prevention of Staphylococcal food poisoning, botulism, salmonella, bacillus infection, E.coli. Food poisoning of fungal origin- Ergotism, Aflatoxin.

UNIT – IV

CONTROL OF MICROORGANISM AND FOOD SAFETY **12 Hours**

Principles of preservation, preservation by high and low temperature, chemical preservatives, salt sugar as preservatives, new trends in preservation.Food Safety – HACCP, GMP, CPA, TQM and ISO 9000 Standards, FSSA, FPA, FQPA,

UNIT – V

MICROBIOLOGICAL TESTING **12 Hours**

Sterilization by Physical agents-Heat, moist heat, fractional sterilization, pasteurization, other types of sterilization, chemical sterilization. Microbiology of water, typical organisms in water, types of bacterial examination for water, water treatment. Distinction between fecal and non-fecal coliforms, IMVIC tests. Microorganisms in the air, sampling techniques, air borne pathogens.

REFERENCE BOOKS:

A) Food Microbiology-Adams, M.R. and Moss M.O

B) Foundations in Microbiology – Kathleen Talaro and Arthur Talalo.
C) Industrial Microbiology –Patel, H.P.
D) Industrial Microbiology – Casida.
E) Industrial Microbiology – Prescott and Dunn
F) Microbiology –Concepts and Applications – Pau IA. Ketchum.
G) Microbiology -Concepts and Applications – McKane and Kandel.
H) Bergeys Manual of Determinative Bacteriology- IX Edition.

TEACHING METHODOLOGY

- Chalk and Board teaching
- Assignments
- Group Discussions
- PPT
- Seminars
- Other Group Activity

SYLLABUS DESIGNER:

- Mrs. K. GOWTHAMI, Head and Assistant Professor, Department of Foods and Nutrition