

DISCIPLINE SPECIFIC ELECTIVE
DSE HH 8B4: PERSPECTIVES IN FOOD SAFETY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

Course title & code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Theory	Tutorial	Practical/ Practice		
Perspectives in Food Safety DSE HH 8B4	4	2	0	2	Studied Semester VII	Studied Food Science and Processing DSE HH 4B1

Learning Objectives

- Understand the basic concept of food safety in terms of related hazards
- Gain knowledge about emerging pathogens and chemical hazards in context of food safety
- Impart knowledge about various processes for management of food safety hazards in the food industry and at the household level

Learning Outcomes

- Explain the relevance of food safety and relate it with health and economy
- Identify different food hazards and the mode of their entry into food
- Comprehend and apply the Food Safety Management Processes including General principles of Hygiene, HACCP, Risk analysis for management of food safety hazards
- Describe the food safety regulations at national and international level

SYLLABUS OF DSE HH 8B4

THEORY
(Credits 2; Hours 30)

UNIT I: Introduction to Food Safety

14 Hours

This unit introduces the types of hazards associated with food, the relevance of and factors that affect the safety of food

- Concept of safe food
- Types of hazards - Physical, Chemical (naturally occurring, adulterants, introduced from environment/processing and packaging) and Biological
- Mode of entry of hazards in food chain
- Factors determining safety of foods

- Consequences of unsafe food on health and economy
- New challenges in food safety, emerging pathogens and chemical hazards

UNIT II: Food Safety Management

16 Hours

This unit covers the management of food safety hazards in the food industry/food service establishment as well as at the household level.

- Food Spoilage - Role of time, temperature and other storage conditions
- General Principles of Hygiene
- Physical and chemical agents used for cleaning and sanitation
- Waste disposal
- Pest and Rodent control
- Basic concepts of Risk analysis, HACCP and GMP
- Food safety regulations in India - FSSAI, BIS, AGMARK
- Codex Alimentarius Commission and other international bodies working on food safety

PRACTICAL (Credits 2; Hours 60)

1. Testing for common adulterants in different foods
2. Testing of foods for microbiological hazards
3. Identification of common food pathogens
4. Bacteriological analysis of water by Most Probable Number (MPN) method
5. Assessment of surface sanitation by swab / rinse method
6. Assessment of personal hygiene
7. Preparation of a HACCP plan
8. Visits to regulatory bodies, food testing labs

Essential Readings

- Forsythe, S.J. (2020). The Microbiology of Safe Food, 3rd edition. UK: Willey.
- Lawley, R., Curtis L. and Davis, J. (2015). The Food Safety Hazard Guidebook. London: RSC.
- Marriott, N. G. and Gravani, R.B. (2006). Principles of Food Sanitation. 5th edition. New York: AVI.
- Mathur, P. (2018). Food Safety and Quality Control. Hyderabad: Orient BlackSwan Pvt. Ltd.
- Suri, S. and Malhotra, A. (2014). Food Science, Nutrition and Safety. Delhi: Pearson.

Suggested Readings

- Agarwal, P. and Mathur, P. (Eds) (2021). Eat Right: A Food Systems Approach. Food Future Foundation. ISBN 978-93-5526459-6
- de Blackburn, C. and Mc Clure, P. (2009). Foodborne Pathogens. Hazards, Risk Analysis and Control. 2nd edition. Washington, US: CRC Press.
- De Vries. (2014). Food Safety and Toxicity..New York: CRC.
- Mortimore, S. and Wallace, C. (2013). HACCP- A Practical Approach. 3rd edition. London: Springer.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time