

SCHEME AND SYLLABUS OF
CERTIFICATE COURSE
IN
FOOD SAFETY AND
PRESERVATION TECHNOLOGY
(w.e.f. academic session 2022-23)

Department of Microbiology and
Bioinformatics

Atal Bihari Vajpayee Vishwavidyalaya

Bilaspur (C.G.)

(A State University, Established by the Government of
Chhattisgarh)

1. About the Department

Department of Microbiology and Bioinformatics was established in Atal Bihari Vajpayee Vishwavidyalaya (formerly Bilaspur University), in the year 2013, with the objective of imparting quality education in the field of Microbiology and Bioinformatics. The Department has always produced quality professionals, holding important positions in Microbiology and Bioinformatics industry in Chhattisgarh, India and abroad. The Department has excellent infra structure with well equipped laboratories for conducting teaching, learning and research in the areas of Microbiology, Bioinformatics, Biotechnology, Botany and relevant disciplines. The Department has well qualified and experienced faculty members, who were always engaged with teaching and research. The staff holds funding from various government organizations and has published good number of books and research publications in reputed journals.

2. About the Course

The certificate programme in Food safety and preservation technology is recognized qualification provides better understanding on food safety and preservation technologies in the present decades that contaminates by microorganisms. Those completing the course are awarded a CERTIFICATE and will be able to apply this knowledge for solving problems and making decisions associated with the food safety and preservation.

3. Scope:

Safety, innovative processes, and sustainability are the most attractive topics for several countries and their economies. Food safety and preservation associates to innovation and sustainability acts as primary theme of the food production and preservation industry. During food production, storage, transport, and final consumption, the food properties may be affected in several ways. To ensure stability and safety, without change of nutritional and sensory losses; a suitable, effective and economic food preservation methods should be selected. The certificate course provides job-oriented knowledge and applications in food safety and preservation methods which caters the need of society. Because of the wide range of applications, Food safety and preservation technology attracts the attention of food biologists, and industrialists.

4. Outcome of the Course:

- To impart comprehensive overview of the scientific and technical aspects of food safety and preservation technology.
- To workout in understanding of metabolism and microbial impact in food safety and preservation technology.
- Helps in producing more safer, nutritious and wholesome food products
- Learn the improvement of the food quality.
- To develop new systems and methods for keeping food products safe and immune from natural harms such as micro-organisms and bacteria.
- Helps in preservation and enhancement of food flavors and helps to reduce toxins in food products which produce better nutritious and safer food products ready for marketing, distribution and public consumption

5. Eligibility Criteria

All those who have completed their Senior School Certificate Examination (Class XII).

6. Fees Structure

One time registration/tuition fees of Rs. 3000/-

7. Intake – 15 seats

8. Course Duration – 6 months/ 24 weeks.

9. Attendance

Minimum attendance of 75 % is required in the classes for appearing in the examination.

10. Examination Scheme

| S. No. | Papers | Maximum Marks | Minimum Marks | Credits |
|--------|---|---------------|---------------|---------|
| 1. | Paper I- Theory (Food safety and preservation technology) | 100 | 30 | 4 |
| 2. | Paper II- Practical (Food safety and preservation technology Lab) | 100 | 40 | 2 |
| | Total marks | 200 | 80 | 6 |

11. Syllabus

Theory

Title: Food safety and preservation technology

| | |
|------------------|--|
| Module 1 | Introduction to Food Processing |
| Module 2 | Food Chemistry: Metabolites, Types of compounds, chemical analysis and equipment's |
| Module 3 | Food Quality Assurance and Quality Control, Quality Management |
| Module 4 | Food processing and its types; Primary and Secondary processing |
| Module 5 | Food Preservation and techniques |
| Module 6 | Food Good Manufacturing Practices; GMP & PRP in the food industry |
| Module 7 | Good Laboratory Practices, Concept of HACCP implementation, Hazards and Risks, Global Food regulatory Authorities |
| Module 8 | Food Plant Design, layout and Food Logistics |
| Module 9 | Food Packaging Technology and Labeling of a mixture of products such as dairy products, fruit & vegetable products, fish products, confectionery products, meat & poultry products and food grains |
| Module 10 | Food Microbiology, food borne illness and hazards |
| Module 11 | Food Sensory Evaluation, FSMS Auditing, types of Audits and CAPA reports |
| Module 12 | Entrepreneurship Development in Food Processing |
| Module 13 | Food preservation methods |
| Module 14 | Food Safety System Certification 22000 (FSSC 22000): Introduction & Audit Requirements |

Laboratory

Title: Food safety and preservation technology lab

1. End-To-End Disease Prediction from Raw Metagenomic Data
2. Eating Habits of Children Aged 10-15 Years in Reference to Nutrition Status
3. Role of Food System in Promoting Environmental Planning
4. To study Food Safety and GMOs
5. Exploring the Applicability of a Rapid Health Assessment
6. Case studies

Suggested Books

1. Megh R. Goyal, Santosh K. Mishra, Preeti Birwal Food Processing and Preservation Technology Advances, Methods, and Applications, Apple Academic Press
2. V Ravishankar Rai, Jamuna A Bai. Food Safety and Protection, CRC Press, 18-Sept-2017
3. Alexandru Grumezescu, Alina Maria Holban. Food Safety and Preservation: Modern Biological Approaches to Improving Consumer Health. Academic press

Online resources

<https://www.britannica.com>

<https://encyclopedia2.thefreedictionary.com>

<http://www.free-ebooks.net/>

<https://www.scribd.com>

<https://www.wikipedia.org/>

BUDGET PLAN FOR THE CERTIFICATE COURSE

| S.No. | Income /course | Amount (in Rupees) |
|-------|---|--------------------|
| a) | Intake- 15 candidates with course fee 3000 rupees | 45,000/- |
| S.No. | Expenditure Detail | Amount (in Rupees) |
| 1. | Instruments and tools (one time) | 0 (Established) |
| 2. | Contingencies | 8,000/- |
| 3. | Stationary and printing | 10,000/- |
| 4. | TA and Conveyance | -- |
| 5. | Teaching (300 per class - 40 classes) | 12,000 |
| 6. | Total | 30,000 |

Year wise plan

| S.No. | Expenditure Detail | Amount (in Rupees) |
|-------|---|--------------------|
| 1. | For first year | 30,000/- |
| 2. | From second year (Contingencies and Teaching) | 20,000/- |