

## Food Processing & Packaging

### Revised Syllabus of III Year Diploma Program (Part Time) (UG)

1. Title of Program: Food Analysis & Quality Assurance
2. Year of Implementation: 2022-2023
3. Duration: One Year
4. Pattern: Semester
5. Medium of Instruction: English
6. Contact hours: 7 hours/week
7. Structure of Course:

#### Syllabus Structure (UG)

Year	Semester	Course No.	Course Code	Contact Hours	Credits (1Credit=15 H)	Total Marks	
1	I	CT I	D*T 101	30	2	75	
		CL I	D* L101	60	2	75	
	II	CT II	D*T 202	30	2	75	
		CL II	D* L202	60	2	75	
	Annual	CP I	D*P101	30	1	50	
	<b>Total</b>				<b>210</b>	<b>9</b>	<b>350</b>
2	III	CT III	D*T 303	30	2	75	
		CL III	D* L303	60	2	75	
	IV	CT IV	D*T 404	30	2	75	
		CL IV	D* L404	60	2	75	
	Annual	CP II	D*P202	30	1	50	
	Industrial and or Incubation and or Research and or Field Training				30	1	-
	<b>Total</b>				<b>240</b>	<b>10</b>	<b>350</b>
	V	CT V	D*T 505	30	2	75	
		CLV	D*L505	60	2	75	
	VI	CT VI	D*T 606	30	2	75	
		CL VI	D*L606	60	2	75	
	Annual	CP III	D*P303	60	2	100	
	Industrial and or Incubation and or Research and or Field Training				30	1	-
	<b>Total</b>				<b>270</b>	<b>11</b>	<b>400</b>
<b>Total</b>				<b>720</b>	<b>30</b>	<b>1100</b>	

**Total No. of Courses: 15 (Theory: 6, Practical: 6, Project:3)**

Theory and Practical: Semester, Project: Annual

CT: Course Theory, CL: Course Lab, CP: Course Project, D: Diploma, \* : First Letter Name of Subject/Department

## Semester V

**Food standards and Specification**

CT V: D \*T 505:

**(Contact Hrs: 30 Credits: 2)****Learning Objectives:**

Students will be able to

- 1) To understand the Food standards and their Specification.
- 2) To understand the Import and export policies in India.

**Unit I: Food standards and Specification**

(15)

HACCP applications in different food sector, Food surveillance: International and national practices, procedure and protocols, food alerts, traceability and food product recall. Risk analysis: risk assessment, management and communication. Food standards and Specification: need for auditing, increasing importance of HACCP based Codex Standards (GATT).

**UNIT II- Import and export policies in India**

(15)

Export and import of food in India: Introduction, import and export policies, FDA import policy, export- import policy, export control systems. Import intelligence and alert systems, packaging and labeling, specifications and certifications. Case studies and judicial pronouncements, procedure for investigations and filing of cases by food safety regulator as per FSS act.

**Learning Outcomes:**

After completion of the unit, Student is able to

- 1) The student should be able to understand the Food standards and their Specification.
- 2) The student should be able to understand the Import and export policies in India.

**Reference Books:**

1. The training manual for Food Safety Regulators. (2011) Vol.III, Food Safety regulations and food safety management. Food Safety and Standards Authority of India.
2. New Delhi. 2. Foreign Trade Policy (27th August 2009 to 31st March 2014), Department of Commerce, Ministry of Commerce and Industry, Government of India.
3. Foreign Trade Policy (27th August 2009 to 31st March 2014), Department of Commerce, Ministry of Commerce and Industry, Government of India

**CLV: D\* L505: (Practical):**  
**(Contact Hrs: 60 Credits: 02)**

**Learning Objectives:**

Students will be able to

1. understand food safety standards set up by FSSAI
2. understand the documentation for audits in food industry

**(Minimum 4)**

**List of Practical's (15)**

1. Hazard Analysis and Critical Control Point (HACCP) of Milk and milk products
2. Hazard Analysis and Critical Control Point (HACCP) of Cereals and cereal products
3. Hazard Analysis and Critical Control Point (HACCP) of Meat and meat products
4. Hazard Analysis and Critical Control Point (HACCP) of Fish
5. Hazard Analysis and Critical Control Point (HACCP) of Bakery products
6. Hazard Analysis and Critical Control Point (HACCP) of Fruits and vegetables
7. Hazard Analysis and Critical Control Point (HACCP) of Confectionary products
8. Auditing of a selected food industry / establishment and submission of report
9. Data collection on the quality of raw materials
10. Preparation of model
11. Validation of model
12. Data collection on the processing parameters and documentation Data processing
13. Determination of critical control points in various food industries.
14. Development of HACCP plan for any food industry.
15. Establishing corrective actions for hazard in food.

**Learning Outcomes:**

After completion of the unit, Student is able to

- 1) The student should able to understand the Hazard Analysis and Critical Control Point (HACCP) of different food products.
- 2) The student should able to understand the Auditing of a selected food industry / establishment and submission of report

**Reference Books:**

1. Mortimore, S., and Wallace, C., (2005) HACCP: A practical approach, 2nd Ed, Aspen Publication Surak, J.G., and Wilson, S. (2007) American Society for Quality, 2nd Ed., Quality Press
2. The training manual for Food Safety Regulators. Vol.II- Food Safety regulations and food safety management. (2011) Food safety and Standards Authority of India. New Delhi.

**Semester VI****Inspection in food industries**

CT VI: D \*T 606:

**(Contact Hrs: 30 Credits: 2)****Learning Objectives:** Students will be able to

- 1) To understand the Inspectional requirements for food business operators.
- 2) To understand Special establishment inspection in food processing

**Unit I: Inspectional requirements for food business operators (15)**

Inspection of food establishments, manufacturing units: Food regulatory enforcement and compliance through inspection. Inspectional requirements for food business operators: general inspection procedures, biological inspection of establishments, ISO 22000.

**Unit II: Special establishment inspection in food processing (15)**

Special establishment inspection part I: Processing of fruits and vegetables, bakery products, milk and milk products, meat and meat products, fish and fish products and chocolate and cocoa.

Special establishment inspection part II: Candy and chocolate processing units, fats and oil processing units, frozen food establishments, food canning plants, beverage industry, retail meat shops, food ware houses and food service distribution

**Learning Outcomes:**

After completion of the unit, Student is able to

- 1) The student should able to understand the Inspectional requirements for food business operators.
- 2) The student should able to understand Special establishment inspection in food processing

**Reference Books:**

1. The training manual for Food Safety Regulators. (2011) Vol.III, Food Safety regulations and food safety management. Food Safety and Standards Authority of India.
2. New Delhi. 2. Foreign Trade Policy (27th August 2009 to 31st March 2014), Department of Commerce, Ministry of Commerce and Industry, Government of India.
3. Foreign Trade Policy (27th August 2009 to 31st March 2014), Department of Commerce, Ministry of Commerce and Industry, Government of India

**CT VI: D\* L606: (Practical):**  
**(Contact Hrs: 60 Credits: 02)**

**Learning Objectives:**

Students will be able to

- 1) understand the Food safety in manufacturing sector, in retail sector, in catering sector.
- 2) understand the Food safety regulation, working with the enforcement agency.
- 1) understand the Food Safety regulation in food industries & case studies.
- 3) understand the Auditing of a selected food industry / establishment and submission of report.

**List of Practical's (15)**

1. Making recommendation to the industry.
2. Food safety regulation, working with the enforcement agency.
3. Food safety in manufacturing sector, in a food processing industry.
4. Food safety in retail sector, in a food retailing company.
5. Food safety in catering sector, in a catering organization.
6. Food safety auditing- working with a food safety auditing company
7. Documentation in ISO 22000.
8. Food hygiene requirements in food industries
9. Equipment's used & their maintainance.
10. Case studies on food hygiene laws
11. Case study of operations in milk industry
12. Case study of operations in Fruit & vegetable industry
13. Case study of operations in bakery & confectionary
14. Case study of operations in meat & meat products
15. Candidates will be trained in the selected topics in any of the four areas in an industry or a company and will submit project at the end and will be evaluated through viva voce.

**Learning Outcomes:**

After completion of the unit, Student is able to

- 2) The student should able to understand the Food Safety regulation
- 3) The student should able to understand the Auditing of a selected food industry / establishment and submission of report
- 4) The student should able to understand the Food safety in manufacturing sector, in retail sector, in catering sector.
- 5) The student should able to understand the case studies in manufacturing unit.

**Reference Books:**

1. The training manual for Food Safety Regulators. (2011) Vol.III, Food Safety regulations and food safety management. Food Safety and Standards Authority of India.
2. New Delhi. 2. Foreign Trade Policy (27th August 2009 to 31st March 2014), Department of Commerce, Ministry of Commerce and Industry, Government of India.
3. Foreign Trade Policy (27th August 2009 to 31st March 2014), Department of Commerce, Ministry of Commerce and Industry, Government of India
5. Mortimore, S., and Wallace, C., (2005) HACCP: A practical approach, 2nd Ed, Aspen Publication Surak, J.G., and Wilson, S. (2007) American Society for Quality, 2nd Ed., Quality Press
6. The training manual for Food Safety Regulators. Vol.II- Food Safety regulations and food safety management. (2011) Food safety and Standards Authority of India. New Delhi.

**CP III: D\*P303 (Project):**  
**(Contact Hrs. 60, Credits: 2)**

Industrial and or Incubation and or and or Field Training is compulsory

**BOS Sub-Committee**

1. DR.R.B.More(Chairman)
2. Mr.Dure P.R.(Member)

**Expert Committee**

- 1.Dr.A.K.Sahoo (Name of Academic Expert)
2. Mr.L.M.Uttekar(Name of Industrial Expert)