

CERTIFICATE COURSE

ON

MB-CC-004'HAZARD ANALYSIS CRITICAL CONTROL POINT '

Duration: 30hours

Course objective

- To develop basic understanding regarding hazard analysis.
- To introduce them the importance of critical control points.
- To enhance their skills about food .
- Understand important problems of contaminated food .
- Learn how to identify ,evaluate and control of significant food safety.

COURSE OUTCOME

By successful completing the course students will be able to:

- In order to identify hazard ,risk and control measures and establish record keeping and documentation.
- Examine the food poisoning bacteria and pathogenic bacteria

Instructional Design

This course is of three month duration which includes theory classes ,field visit and assignment and project work

Course Structure and Examination Scheme

Course No	Course Name	Contact classes (hour)	Laboratory Experiment (Hour)	Internal Marks	External marks	Total marks

1	Hazard analysis critical control point	15	15	20	60	80
---	--	----	----	----	----	----

Eligibility:

All the students belongs to semester are eligible to enroll for course .

No of seats :74

Grading system

Following Percentage based grading system will be applicable to the course

Range of % of marks	Grade
90-100	O
80-<90	A+
70-<80	A
65-<70	B+
55-<65	B
45-<55	C
40-<45	P
<40	Fail

SYLLABUS

MODULE 1;- Food safety and concept

Importance of food safety in the food processing industry Risk classification, National and international food regulatory agencies, General food laws and food safety regulations, Nutritional labeling regulation (mandatory and optional nutrients, nutritional descriptors and approved health claims); Microbial contamination (including cross-contamination /indirect contamination) Chemical contamination, Physical contamination , Allergen contamination

MODULE 2:- Food as substrate

Types of microorganism in food : Bacteria, fungus, Yeast etc. Factors affecting microbial growth in food, Beneficial and harmful microbes in food. Food preservation techniques including physical and chemical methods.

MODULE 3:-Microbiological examination of food

Determination of indicator organism, direct examination methods : membrane filtration, direct epifluorescent filter technique, different cultural techniques in different types of media, enumeration methods: plate count, Direct microscopic count, most probable number method, dye reduction method : methylene blue reduction method and reazaurin test, agar droplet method and electrical examination.

MODULE 4:- Hazard Analysis and Risk Assessment

Physical hazards (metals, glass, etc), Chemical hazards (food additive toxicology, natural toxins, pesticides, antibiotics, hormones, heavy metals and packaging components) , Biological hazards (epidemiology of biological pathogens: virus, bacteria and fungi), Evaluation of the severity of a hazard Controlling Food Hazards . Hazard Analysis Critical Control Point (HACCP) system.

REFERENCE

1. Food safety and standards Act 2006, Rules 2011, Regulations ,2011, 10th Edition ,ILBCO Indian Law Book Company ,2013.
2. Early, R .: Guide to Quality Management Systems for the Food industry ,Blackie, Academic and professional, London
3. Gould ,W.A and Gould ,R,w, .Total quality Assurance for the Food Industries, CTI Publications Inc. Baltimore.