



KONGU ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

ERODE – 638 107

DEPARTMENT OF BIOCHEMISTRY

VALUE ADDED COURSE – SYLLABUS

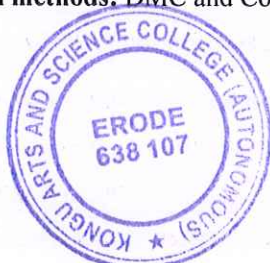
18VBCFS – FOOD SAFETY AND QUALITY CONTROL

PAPER I - THEORY: FOOD SAFETY AND QUALITY CONTROL

OBJECTIVES:

- ❖ Helps to maintain safe food handling practices and protect public health.
- ❖ Gain knowledge about the quality assurance of foods.
- ❖ Gain the fundamental knowledge about the laws of food standards

UNIT I	Introduction to Quality Control	5 Hours
<p>Quality Control: Definition, Principles, factors and Importance of Quality Control.</p> <p>Quality attributes of Food: Nutritional quality, Factors affecting taste Perception, Taste modification and Food allergy.</p> <p>Texture: Introduction, definition and importance of texture. Characteristics of texture, Texture measurement - Basic rheological models, Application of texture measurement in cereals, fruits and vegetables, dairy, meat and meat products.</p>		
UNIT II	Sampling of Foods and Food additives	5 Hours
<p>Sampling: Objectives, Quality assurance in Food Services System - precautions during sampling, Formulating sampling plan and sample size.</p> <p>Sample and Sampling Method of Quality Evaluation: Hazards - Microbial, Physical and Chemical.</p> <p>Food additives: Definition, Importance, Classification (intentional and unintentional additives), Common types and its hazards, immediate and long term effects of food additives, Merits and Demerits</p>		
UNIT III	Food adulteration and Contaminants	5 Hours
<p>Food adulteration: Common adulterants, simple tests for detection of adulteration, Types - Intentional, Incidental adulterants and metallic contaminants.</p> <p>Food Contamination: Biological Contamination; Chemical Contamination - Polycyclic Aromatic Hydrocarbons' (PAHs), Maillard Reaction Products (MRPs). Acrylamide, Chloropropanols, Ethyl Carbamate Phthalates, Polycyclic Aromatic Hydrocarbons (PAHS), Nitrosamines. Polychlorinated Biphenyl (PCB), Chlorinated Hydrocarbons, Pesticides and Heavy Metals; Physical Contamination and Cross-Contamination</p>		
UNIT IV	Methods of Food analysis	5 Hours
<p>Physical methods: Lactometer, Refractrometry, Polarimatory, Polarography, Food Rheology, Viscosity, Surface tension, Freezing point.</p> <p>Chemical methods: Proximate principles, Moisture in spices, Specific gravity, Ash and types, Total protein, non-protein nitrogen and specific protein in foods, Total fat and different types of lipids, Total Carbohydrates, starch, mono and disaccharides, Crude fibre and dietary fibre, Macro nutrients (Na, K, Mg, I and Fe), Vitamins (A, D, E and K) and Trace Elements (Cu, Zn and As).</p> <p>Microbial methods: DMC and Coli form determination</p>		



Dr. N. RAMAN
PRINCIPAL,
KONGU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)
NANJANAPURAM, ERODE - 638 107.



KONGU ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

ERODE – 638 107

DEPARTMENT OF BIOCHEMISTRY

UNIT V	Food Standard laws and safety management	5 Hours
Definition and Terminology; Current changes in global food safety standards and their harmonization		
Food Laws: HACCP concept, principle and application in food industry. QMS (ISO: 9000:2000) - General Principles, Fundamentals and Standards requirements, TQM tools and techniques.		
Total Hours		25 Hours

Reference Books:

1. IntezAlli, (2003) "Food Quality Assurance: Principles and Practices", by CRC Press, 176 Pages.
2. Yasmine Motarjemi Huub Lelieveld, (2013) "Food Safety Management" 1st Edition, A Practical Guide for the Food Industry, 1192 pages.

Course Outcomes: On Completion of this course the students will be able to

- Develop basic knowledge in the Concepts, sampling and analysis of different food substances

PAPER II: PRACTICALS: FOOD SAFETY AND QUALITY CONTROL

OBJECTIVES:

- ❖ To learn the presence of various adulterants in food substances.
- ❖ Able to estimate the certain foods using different methods.

UNIT I		3 Hours
1. Test for Proteins in Milk and Egg Albumin.		
2. Test for milk protein by Folin's method.		
3. Test for Carbohydrates in Banana extract.		
4. Test for Carbohydrates in Sugarcane extract.		
UNIT II		3 Hours
1. Test for reducing sugar in Banana extract (Benedict's method).		
2. Analysis of reducing sugars(Fehling's procedure).		
3. Analysis of reducing and non-reducing sugars (Potassium ferricyanide method)		
4. Test for Starch in Potato extract.		
UNIT III		3 Hours
1. Test for Fats in Egg Albumin.		
2. Test for Fats in Peanuts and Different Oil.		
3. Checking of Adulteration in Milk - Water, Starch, Detergent, Glucose and Urea.		
4. Detection of Adulteration in Milk products and Artificial milk		



Dr. N. RAMAN
PRINCIPAL,
KONGU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)
NANJANAPURAM, ERODE - 638 107



KONGU ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

ERODE – 638 107

DEPARTMENT OF BIOCHEMISTRY

UNIT IV	3 Hours
1. Detection of Adulterant in Dal and Pulses. 2. Detection of Adulterants in Edible oil. 3. Detection of Adulterants in Cool Drinks 4. Detection of Adulteration in Tea leaves, Turmeric powder, Saffron and Asafoetida (Hing).	
UNIT V	3 Hour
1. Analysis of level of Vitamin-C in Fruits and Vegetables. 2. Analysis of different water by microbiological techniques. 3. Determination of pH of different foods using pH strips. 4. Estimation of chlorophyll content of green vegetable.	
Total Hours	15 Hours

Reference Books:

1. InteazAlli, (2003) "Food Quality Assurance: Principles and Practices", by CRC Press, 176 Pages.
2. Yasmine Motarjemi Huub Lelieveld, (2013) "Food Safety Management" 1st Edition, A Practical Guide for the Food Industry, 1192 pages.

Course Outcomes: On Completion of this course the students will be able to

- Gain practical approach in food analysis



Dr. N. RAMAN
PRINCIPAL,
KONGU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)
NANJANAPURAM, ERODE - 638 107.