

**TKM COLLEGE OF ARTS & SCIENCE, KOLLAM**

**DEPARTMENT OF BIOCHEMISTRY**

**NUTRITION AND FOOD SAFETY**

**SYLLABUS**

**Total Hours: 35**

**Learning Outcomes:** At the end of the course, the students will learn how to suggest a balanced diet. They will also be capable of describing Food preservation, Food adulteration, Food Borne Diseases, Food poisoning and Food Safety and Allied Laws.

**Module I (6 hrs)**

Chemical composition of food: Carbohydrates, lipids, proteins, fibre, vitamins, and minerals. Free Radicals and Antioxidants.

**Module II (6 hrs)**

Balanced diet formulation: Energy value of foods, Respiratory Quotient (RQ), Basal Metabolic Rate (BMR), Specific Dynamic Action (SDA) of foods, Energy expenditure for various types of activities, Recommended Daily Allowance (RDA).

**Module III (6 hrs)**

Food preservation: Principles and methods of - Heat processing, pasteurization, canning, dehydration, freezing, freeze drying, fermentation, microwave, irradiation and chemical preservatives.

Food adulteration: common adulteration and contamination.

**Module IV (6 hrs)**

Food Borne Diseases: Definition, Classification - Food borne intoxications & Food borne infections.

Food poisoning: Types of food poisoning, method of investigation of food poisoning, prevention and control- food sanitation, refrigeration, surveillance.

**Module V (6 hrs)**

Rules and Regulations of Food Safety: Definitions - Authorities and Officers - Constitution, Functions and Powers - General Provisions as to Articles of Food.

**Course Project: *Microgreens farming* (5 hrs)**

**References:**

- N. Sakunthala Manay and M. Shadaksharaswamy. Foods: Facts and principles, 3rd edition, ISBN: 978-81-224-2215-3.

- Stipanuck, Martha H., Caudill, Marie A. Biochemical, Physiological, and Molecular Aspects of Human Nutrition (3rd Edition, 2012).