



MANGALORE UNIVERSITY

DEPARTMENT OF BIOSCIENCES

MSc Food Science & Nutrition

FNH 401 - FOOD SCIENCE

52 Hrs (13× 4 units)

Course Outcome:

- Describe the knowledge regarding various nutritional classification of food grouping system
- Understand the structure of cereal grains, nutritional importance, processing and baking technology.
- Classify of fruits and vegetables including the nutritional importance, the methods of preservation and effect of cooking on nutritional composition.
- Identify the concept of milk processing, its composition and to assess the quality parameters of milk.
- Write down the compositions of meat and egg. Regulations and processing of meat in slaughtering operations and evaluating the egg quality.

Unit I: Cereal and Pulses: Milling of cereals, parboiling, nutrient loss during parboiling. Baking technology; bread, biscuits, cookies, leavening agents (different types and methods). Breakfast cereals. Pulses- types and processing of different pulses

Unit II: Fruits and vegetables: Principles of fruits and vegetable preservation (heat, sugar, salt, fermented and dried). Pre-processing of fruits and vegetables (peeling, cutting and blanching). Principles of storage; natural, ventilated, low temperature. Fruit and vegetable juices, cordials, nectars, concentrates, jam, jellies, squash, syrups, marmalades, pickles. Theory of gel formation, FPO (Fruit product order)

Unit III: Milk and milk products: Milk composition, factors affecting milk quality, physical and chemical properties of milk. Processing of milk- Separation, centrifugation, pasteurization, sterilization, homogenization, effect of processing on nutritive value. Quality test for milk-platform test, adulterant test and other quality checks, MPO (Milk product order)

Unit IV: Meat, fish, poultry and egg: Meat- composition, slaughtering and related practices, ageing, and curing, smoking, tenderizing, colour changes during cooking. Fish - composition,

quality factors, preservation, drying, salting, curing, smoking, fermented fish products and canning. Poultry- processing plant operation(slaughtering to packaging), cooking, flavor and colour changes. Eggs - composition, quality factors, pasteurization of eggs, egg substitutes and powdered egg, role of egg in cookery.

REFERENCES

- Fabriani, G and Lintas C.(1988) Durum wheat chemistry and technology. American Association of Cereal Chemistry Inc.
- Winton and Winton (1991) Techniques of food analysis, Allied Scientific Publisher
- Pomeranz Yeshuraj, Food Analysis; theory and practice
- Matz A Samuel, Bakery Technology and Engineering
- Meat Handbook- Lavie A., AVI Publishing, Westport, 197

