UGFSc-T17101: **DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY**
SYLLABUS FOR B.Sc. Ist YEAR

SEMESTER I
FOOD CHEMISTRY AND NUTRITION

UNIT I:
Introduction to food Chemistry and Nutrition:

- Definition and concepts: Food, Food Chemistry, Nutrition, Nutrients , Optimum nutrition ,Good nutrition , Malnutrition
- Recommended dietary intake (RDI), Basal metabolism (BM), Factors affecting RDI and BM.
- Importance of food chemistry
- Water in foods: Physical properties, water activity

UNIT II:
Macronutrients:

- Carbohydrate: Definition, chemistry, classification, sources, properties. Nutritional and industrial importance. Starch gelatinization and retrogradation.
- Proteins: Definition, chemistry, classification, sources, properties. Chemical make up and industrial importance.
- Fats: Definition, sources, properties,chemical make up. Significance of MUFAS and PUFAS.

UNIT III:
Micronutrients

- Vitamins: Definition, importance, sources, fat soluble and water soluble vitamins: effect of processing and storage on vitamins.
- Minerals (calcium, iron, phosphorus, iodine and zinc): their importance and sources.

Total - 14 pages

- Enzymes: Definition , sources, classification, application in food processing, Enzymatic browning in foods and its control

UNIT IV:
Functional foods:

- Functional foods : Definition and classification
- Pigments : Importance, types,sources of pigments, change in pigments during processing
- Antioxidants: Role and sources

PRACTICAL:

- Preparation and standardization of solutions.
- Determination of moisture content
- Determination of ash content
- Determination of protein
- Determination of crude fat
- Quantitative and qualitative tests of carbohydrates
- Determination of free fatty acids

REFERENCES

1. Food chemistry by Meyer
2. Food and Nutrition by by M. Swaminathan
3. Food: Facts and principles by Shakuntala Manay
4. Nutrition and Dietetics by Joshi