

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. SEMESTER : VIII

FOOD PROCESSING AND TECHNOLOGY

Subject Name: **FOOD INGREDIENTS AND FLAVOUR TECHNOLOGY**

Sr. No.	Course Contents	Total Hrs
1.	Introduction to Food Ingredients: Types, classes, functions and applications with examples in each class, statutory requirements for addition and labelling (FDA and FSSAI), Functional ingredients, testing and estimation of key ingredients, Minerals and vitamins, Industrial uses and applications. Material Safety and health issues.	07
2.	Food Flavour Basics: Olfactory perception of flavour and taste – Theories of olfaction - Molecular structure and activity relationships of taste – Sweet, bitter, acid and salt, Chemicals causing pungency, astringency, cooling effect – properties. Classification of flavours – Natural, Nature identical and synthetic – Flavour potentiators.	08
3.	Basics of food colours: Hue, chroma, brightness. Regulations regarding additions – Toxicology and safety aspects.	06
4.	Technology of Natural and Nature Identical flavours: Classification: Alliaceous flavours – Bittering agents, Coffee and Cocoa, Fruit flavours. Evolution of flavours during processing – enzymatic development, effect of roasting, cooking, frying on flavour developments.	08
5.	Essential oils and oleoresins: Extraction: Super critical fluid extraction - Continuous and semi-continuous methods- Effect of types of solvents used. Liquid and dry flavour production - Staling of flavours.	08
6.	Techniques for analysis of flavours and colours: Total component analysis– Basics and methods – Recent developments. Head space analysis –static and dynamic methods – basic principles – method and developments - Solid phase micro extraction of aroma components - E nose technology. Tristimulus colorimetry – Basics and application to foods.	08

Reference Books:

1. Flavour Chemistry and Technology, By Gary Reineccius, Henry B. Heath, 2nd Edn., Taylor and Francis group, CRC Press, 2006.
2. Natural Food Colorants: Science and Technology, By Gabriel J. Lauro, Frederick John Francis, CRC Press Pub., 2000.
3. Food Flavours – Biology and Chemistry, By Carolyn Fisher, Thomas R. Scott, RSC Publishing, 1997.