

GUJARAT TECHNOLOGICAL UNIVERSITY

B.Pharm
SEMESTER: VIII

Subject Name: Food Analysis

Subject Code: 2280009

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	Theory		Practical	
				External	Internal	External	Internal
3	0	0	3	80	20	0	0

Sr No	Course Content	Teaching hrs
1.	Introduction to Instrumentation Techniques;	
a.	Centrifuge techniques: Zonal, density, gradient and ultra-centrifugation techniques and their applications.	2
b.	Electrophoresis: zonal, paper, gel electrophoresis and isoelectric focusing and their application	2
c.	Spectroscopy: Basic concepts, Beer-Lambert law & brief description of colourimetry, UV-VIS, IR, NMR, fluorescence, mass spectroscopy, flame photometry and x-ray diffraction.	4
2.	Analysis of chemical constituents, their characterization and significance-moisture, ash, minerals, lipids, fat, proteins, fibre, starch, reducing sugars	5
3.	Analysis of vitamins, pigments, flavours, extraneous matter, pesticides and mycotoxins. Microscopic analysis of foods other methods- potentiometry, enzymatic, immunoassays, thermal analysis. Analysis of genetically modified foods	8
4.	Chromatographic methods for analysis of food and additives like TLC, HPTLC, GLC, HPLC, SFC and Flash chromatography.	5
5.	Legislation for food, the Food safety act, Food standards and nutrition, general chemical and instrumental methods for food analysis.	4
6.	Contaminants in food: contaminants in food material and food additives. Standards for food additives.	4
7.	Analysis of sugar, preservatives, starch products, beverages, chocolate, herbs, spices, cereals, oils and fats, dairy products.	4
8.	Detection of common adulterants, microbial contamination, toxic trace metals, pesticides and insect infestation in food products.	4
9	Stability studies of food products.	3

References Books:

1. Samuel A. Matz, The Chemistry and Technology of Cereals as Food and Feed, Medtech, Van Nostrand Reinhold/AVI, 115, Fifth Avenue, New York 10003, Ed: 2nd 2013
2. Bernard W. Minifie; Chocolate, Cocoa and Confectionery: Science and Technology, Van Nostrand Reinhold /AVI, 115, Fifth Avenue, New York 10003 Ed.3rd 1989.
3. Peter KV. Handbook of Herbs and Spices: Woodhead Publishing Ltd, 80 High Street, Cambridge, UK 2012
4. Deshpande SS, Handbook of Food Toxicology, Indus Therapeutic Inc. Heyderabad, India; Marcel Dekker, Inc., 270, Medisone Avenue, New York, NY 10016, 2002
5. Steven R. Tannenbaum, Nutritional and Safety Aspects of Food Processing, Marcel Dekker, Inc., New York, NY; 1979.
6. Green JH, and Kramer A,; Food Processing Waste Management. AVI Publishing Co., Westport, CT; 214 (1984).