

Practical Plan

Name of the college: Government College of Arts, Science & Commerce, Sanquelim, Goa		
Name of Faculty: Dr. Dipesh Sakharam Harmalkar	Subject: Chemistry of Food and Nutrients (Minor Vocational II)	
Paper code: CHC-321	Program: T.Y.BSc.	Division:
Academic year: 2026 - 2027	Semester: V	Total Practical/Labs: 13 (30 hours)
Credits:1		
Course Objectives: 1. To introduce students to basic chemistry involved in analysis of different components of food. 2. To develop skill to analyze nutrients and minerals in different types of food. 3. To distinguish between the pure and adulterated food. 4. To analyse the adulterants in food.		
Expected Course Outcome: At the end of the course, students will be able: CO1: Analyze the major nutritional components (proteins, sugars, fats, vitamins, minerals) in various food samples using standard analytical techniques. CO2: Apply chemical principles to detect and identify common adulterants in food items to assess their purity and quality. CO3: Evaluate the quality parameters of fats and oils by determining key chemical constants like acid value, iodine value, and saponification value		
Student Learning Outcome: At the end of the course, students will be able: LO1: Perform specific chemical and titrimetric tests to quantitatively estimate macro-nutrients and micro-nutrients in food substances. LO2: Execute standard procedures for the separation of biomolecules (e.g., amino acids by TLC) and the detection of adulterants in common food commodities. LO3: Interpret analytical data from food chemistry experiments to determine nutritional content, assess food quality, and identify adulteration		

Month	Practical/Labs Scheduled Date	No. of Practical/Labs planned	List of Experiments	Reference books
June	25/06/2026	1	Estimation of amount of salt in butter by Mohr titration	Ref 1 and 2
July	02/07/2026	1	Estimation of acid value of fat/ oil	Ref 1 and 2
	09/07/2026	1	Estimation of iodine in iodized common salt using iodometry	Ref 1 and 2
	16/07/2026	1	Separation of amino acids by Thin Layer Chromatography.	Ref 1 and 2
	23/07/2026	1	Detection of adulterants in food items. a) Turmeric powder b) Black pepper c) Sugar /dextrose from Honey	Ref 3
	30/07/2026	1	Estimation of saponification value of fats	Ref 1 and 2
August	06/08/2026	1	Detection of adulterants in food items. a) Turmeric powder b) Black pepper c) Sugar /dextrose from Honey	Ref 3
	13/08/2026	1	Determination of iron in leafy vegetables by redox method.	Ref 1 and 2
	20/08/2026	1	Estimation of the iodine value of fat	Ref 1 and 2
	27/08/2026	1	Determination of iron in leafy vegetables by redox method.	Ref 1 and 2
September	03/09/2026	-	Quantitative estimation of sugars by titrimetric method	
	10/09/2026	1	Quantitative estimation of proteins by Folin-Lowry method.	Ref 1 and 2
	24/09/2026	1	Determination of calcium and magnesium in leafy vegetables by EDTA titration	Ref 1 and 2
October	01/10/2026	1	Estimation of Vitamin C in citrus fruits by acid base titrimetric method	Ref 1 and 2
	08/10/2026	1	Repeat Practical	

References

1. S. Suzanne Nielsen, Food Analysis Manual, 2nd Edition, Publisher Springer, UK 2015.
2. Manual of methods of analysis of foods, Food Safety and Standards Authority of India, Ministry of Health and Family Welfare, Government of India, New Delhi, 2015
3. Food Adulteration Testing Manual (14th Revised Edition) –Consumer Guidance Society of India (CGSI) Mumbai-2019

* Assessment Rubrics	
Component	Max Marks
ISA	15
Practical SEE	25
Semester End Exam	60
Total	100

