

**Shree Manibhai Virani and Smt. Navalben Virani Science College, Rajkot**  
**(Autonomous)**  
**Affiliated to Saurashtra University, Rajkot**

**B.Sc. BIOCHEMISTRY**

**Part III- Ability Enhancement Compulsory Course**  
**Skill Enhancement Course – Value Added**

**Syllabus**

**For Students Admitted From A.Y.2021-2022 and Onwards**

<b>Ability Enhancement Compulsory Course</b> For the students admitted from A.Y. 2021-2022 & onwards		
Offering Department: <b>Biochemistry</b>	Offered to: <b>All Departments</b>	
<b>Semester – II</b>		
Course Code	Course Title (SEC)	Course Credit and Hours
<b>21AEVA13</b>	<b>Food Adulteration</b>	<b>1 Credits - 6 hrs/wk</b>

**Course Description:** This course describes different mismatch used for the food adulteration. Reason behind the adulteration and Common adulterants used in food like grains, milk, milk product, fruit and vegetables . Course covers, harmful effect of adulterants & pesticides and detection of adulterants using various physical, chemical and microbial tests.

**Course Purpose:** To bring a general awareness about the adulterations of food products, motivate and inspire everybody to have a healthy diet. Importance of food safety and quality management. Course aims to develop in stakeholders simple testing methodologies for detection of adulterants with basic set up at home.

<b>Course Outcomes:</b>		
<b>CO No.</b>	<b>CO Statement</b>	<b>Blooms taxonomy Level (K<sub>1</sub> to K<sub>6</sub>)</b>
CO <sub>1</sub>	Understand the side effect of Adulterants on Community Health	K1, K2
CO <sub>2</sub>	Understand and Perform different test for the detection of adulterants in spices.	K1, K2, K3, K4

CO <sub>3</sub>	Identify and Analyse the adulterants present in milk and milk product and side effect of microbes in milk.	K2, K3, K4
CO <sub>4</sub>	Determine and Estimate the types of adulterants present in food grains	K3 , K4 ,K5
CO <sub>5</sub>	Explain different methods used to remove the pesticides used in fruit and vegetable.	K1, K2

<b>Course Content</b>	<b>Hours</b>
<b>Unit-I : Types of adulteration and detection methods</b>	<b>12 hrs</b>
a. Introduction: Food and food product definition. b. Prevention of Food Adulteration Act. (PFA) c. Effect of Adulterants on Community Health	
<b>Unit-II: II Detection of adulterants in spices:</b>	<b>12 hrs</b>
a. Introduction and types of Adulterants in spices. b. Detection of adulterants in spices c. Side effect of adulterants in spices.	
<b>Unit- III: Types of Adulterants in milk and milk products.</b>	<b>12 hrs</b>
a. Introduction and types of adulterants in milk and milk products. b. Detection of adulterants in milk and milk products. c. Side effect of adulterants in milk and milk products. d. Detection of microorganism in milk (MBRT	
<b>Unit- IV: Types of Adulterants in flour, sugar, salt, tea and food grains</b>	<b>12 hrs</b>
a. Introduction and types of adulterants food grains b. Detection of adulterants in food grains. c. Side effect of adulterants food grains	
<b>Unit- V: Unit: V Identification of adulterants in fruits and vegetables.</b>	<b>12 hrs</b>
a. Types of adulterants used in fruits and vegetables. b. Side effect of pesticides in fruits and vegetables. c. Methods used for removal of adulterants in fruits and vegetables.	

**Text books:**

1. Bruce, E. M. (1917). Detection of the common food adulterants. D. Van Nostrand Company.
2. Hassall, A. H. (1876). Food: its Adulterations, and the Methods for their Detection.

Longmans Green.

**Reference books:**

1. Wiley, Harvey Washington Foods and Their Adulteration Rarebooksclub.com
2. Schlink, Frederick John Eat, Drink, and Be Wary: The Problems of Diet and Food Adulteration Literary Licensing, LLC

**Pedagogic tools:**

- Chalk and Board
- Power point presentation
- Seminar
- Videos

**Methods of Assessment& Tools:**

Components of CIA: 100 marks

<b>Sr. No.</b>	<b>Component</b>	<b>Content</b>	<b>Duration (if any)</b>	<b>Marks</b>	<b>Sub Total</b>
<b>A</b>	Test 1	All Units	1 hours	20	20
<b>B</b>	Practical Performance	All Units	Continuous assessment	50	50
<b>C</b>	Assignment		-	20	20
<b>D</b>	Attendance		-	10	10
<b>Grand Total</b>					<b>100</b>
<b>Assignment</b>		<ul style="list-style-type: none"><li>• Survey based assignment.</li><li>• Case study writing</li><li>• Student generated handbook</li></ul>			
<b>Practical Performance</b>		<ul style="list-style-type: none"><li>• Quiz</li><li>• Situation based question</li><li>• Group discussion</li><li>• Hands on Exercises</li></ul>			