

## CURRICULUM PLAN

### (Odd Semester, 2024-2025)

**SEC 5: Chemistry, III Year (Semester V), NEP-UGCF 2022 Name of the teacher: Dr. Renu Bala**

**Name of Paper: SEC: Essential Food Nutrients**

**UPC: 2176000001**

**One Lecture Per Week**

Contents	Allocation of Lectures	Month wise schedule to be followed	Tutorial/Assignments /Presentation etc
<b>UNIT-1: Carbohydrates</b> Introduction, sources, functions, deficiencies, Structures of monosaccharides and disaccharides: glucose, fructose, galactose; lactose, maltose, sucrose, maltitol, concept of reducing and nonreducing sugars; role of carbohydrates as sweeteners in food; lactose intolerance, galactosemia, dental plaque, overview of carbohydrate metabolism.	03	1 <sup>st</sup> August 2024 – 30 <sup>th</sup> August 2024	<ul style="list-style-type: none"> <li>Syllabus Overview</li> <li>Books Suggestions</li> <li>Related Examples and Problem solving session</li> </ul>
<b>Unit 2: Lipids</b> Introduction, sources, functions, deficiencies, classification (fatty acids, phospholipids, fats & oils, waxes), common fatty acids present in oils and fats, Omega- 3,6,9 fatty acids, trans fats, chemical properties: iodine value, saponification value, effect of frying on fats, changes in fats and oils rancidity, lipolysis, flavor reversion, auto-oxidation and its prevention.	04	1 <sup>st</sup> September 2024 -30 <sup>th</sup> September 2024	<ul style="list-style-type: none"> <li>Numerical Solving</li> <li>Doubt Session</li> <li>Test</li> <li>Assignment/ Presentation</li> </ul>
<b>Unit 3: Proteins</b> Introduction, sources, functions, deficiencies, protein structure (primary, secondary and tertiary), physico-chemical & functional properties of proteins, food proteins: animal and plant proteins.	08	1 <sup>st</sup> October 2024 – November 2024	<ul style="list-style-type: none"> <li>Numerical Solving</li> <li>Doubt Session</li> <li>Test</li> <li>Assignment/Presentation</li> </ul>
<b>Unit 4: Vitamins &amp; Minerals</b> Vitamins: Introduction, classification: fat-soluble vitamins & water-soluble vitamins. Minerals: Introduction, classification: macrominerals (Ca, P, Mg) & microminerals (Se, Fe, I, Co, Zn, Cu, Se, Cr). Role of vitamins and minerals in food chemistry.			

**Dr. Renu Bala**

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