



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Paramedical Science
Choice-Based Credit System (CBCS) in Light of NEP-2020
General Electives (UG 2024 – 25), VI SEM

Subject Code	Category	Subject Name	Teaching and Evaluation Scheme								
			Theory			Practical		L	T	P	CREDITS
			End Sem University Exam	Two Term Exam	Teacher's Assessment	End Sem University Exam	Teacher's Assessment				
GUPMS601	GE	Nutritional Biomolecules & Human Health	60	20	20	-	-	4	0	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit; *Teacher Assessment shall be based on the following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs): The students will:

CEOs 1: Students will have a comprehensive understanding of biomolecules, vitamins, and nutraceuticals.

CEOs 2: Enabling them to apply this knowledge to real-world scenarios and make informed decisions related to nutrition and health

Course Outcomes (COs): Students should be able to:

COs 1: Analyze the nutritional relevance of carbohydrates and discuss the important amino acids and lipids and their role in maintaining overall health

COs 2 classify various vitamins elaborately including their sources, biochemical. roles, deficiency

COs 3 Assess nutritional status of an individual and nutraceuticals

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Unit-1: Basic Concepts Of Food, Nutrition & Biomolecules

- Concept of food and nutrition, Basic food group- energy yielding, body building and functional food, units of energy, calorific and nutritive value of food, Basal metabolic rate (BMR)
- Understanding relationship between food, nutrition and nutritional aspects of Biomolecules
- Balanced diet: example of low and high –cost balanced diet –for infants, children adolescents, adult and elderly people

Unit-2: Functions, Dietary sources and Clinical manifestations of deficiency/ excess of the following nutrients

- Carbohydrates, lipids and proteins
- Fat soluble vitamins-A, D, E and K
- Water soluble vitamins – thiamin, riboflavin, niacin, pyridoxine, folate, vitamin B12 and vitamin C
- Minerals – calcium, iron and iodine

Unit 3 Carbohydrates: Definitions, Classification, and General properties

- Monosaccharides-glucose, fructose, galactose, ribose
- Disaccharides – maltose, lactose, sucrose
- Polysaccharides – dextrin, starch, glycogen

Unit 4: Amino acids, Proteins & Enzymes

- Definition & classification of amino acids
- Essential and non-essential amino acids
- Proteins: Definition, classification, levels of protein structure, Function
- Enzymes: Definition, characteristics, factor effecting enzyme activity

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Unit 5: Lipids

- Definitions and classification of lipids , Biological roles of lipid
- Types and properties of fatty acids
- Composition and properties of fats

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RECOMMENDED READINGS:

- Margaret Mc Williams (2012) food fundamentals (10th edition) prentice Hall
- Lehninger A L, Nelson D L and Cox M M (2009). Principles of Biochemistry, 6th Ed. CBS Publishers and Distributors.
- Murray R.K, Granner D K, Mayes P A and Rodwell V W (2009). Harper's Biochemistry, 28th Ed, Lange Medical Book.

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