



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Home Science

Choice Based Credit System (CBCS) in Light of NEP-2020

B. Sc. Food and Nutrition

Semester I

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME						L	T	P	CREDITS
			Marks	THEORY			PRACTICAL					
				END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BSFNC102	Major-1	Introduction to Human Nutrition	Max	60	20	20	30	20	4	0	4	6
			Min	24	16		14	9				

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

COURSE OBJECTIVES: The students will have ability to:

CO1: To develop understanding about human nutrition components and their requirements.

CO2: To gain knowledge about the role of various nutrients, sources, and storage.

CO3: To orient about the effect of excess and deficiency of nutrient in the body.

Course Alignment with UNSDG:

The Course aims to fulfill the United Nations Sustainable Development Goals,

- **SDG - 3**, Good Health and Well-Being
- **SDG -2**, Zero Hunger — understanding nutrition supports food security goals,
- **SDG - 12**, Responsible Consumption — sustainable and balanced dietary practices

Course Outcomes (COs): After completion of the course, the student should be able to

CO1:	Recall and describe the fundamental concepts of nutrition, classification of nutrients, and their sources.
CO2:	Understand the role and significance of macro and micronutrients in maintaining human health and physiological functions
CO3:	Analyze dietary intake patterns, energy balance, and nutritional requirements across different life stages.
CO4:	Evaluate the relationship between nutrition, food systems, and non-communicable diseases such as obesity, diabetes, and cardiovascular disorders.
CO5:	Apply knowledge of traditional Indian dietary wisdom and AI-based nutritional tools to solve real-world nutrition problems.

Chairperson

Board of Studies

Shri Vaishnav Vidyapeeth Vishwavidyalaya,
Indore

Chairperson

Faculty of Studies

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition
Semester I

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME						L	T	P	CREDITS
			Marks	THEORY			PRACTICAL					
				END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BSFNC102	Major-1	Introduction to Human Nutrition	Max	60	20	20	30	20	4	0	4	6
			Min	24	16		14	9				

Legends: L - Lecture; T - Tutorial/Teachers Guided Student Learning; P - Practical

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

Teaching Pedagogy:

T1	Classroom teaching (white board), Power Point Presentations, Interactive lectures, Inquiry-based teaching
T2	ABL activities, Assignments, Flip Class/ Seminars, Quizzes, Oral Viva-voce examination

Experiential Learning: Project Based Learning (PBL) and Case Studies

<u>Modules</u>	<u>Name</u>	<u>Experiment/ABL/PBL</u>	<u>Bloom Taxonomy</u>
Module 1	Case study on food habits and nutritional status assessment	Case Study	Analyze
Module 2	AI-based dietary assessment and balanced diet planning	PBL	Apply, Analyze
Module 3	Comparative analysis of nutrient composition of carbohydrate and protein-rich foods	PBL	Apply
Module 4	Case study on vitamin and fat deficiency disorders	Case Study	Apply, Analyze
Module 5	Study of traditional Indian foods (millets, fermented foods, herbs, spices) and their nutritional significance	Case Study	Apply, Analyze

R. Shukla
Chairperson
 Board of Studies

Shri Vaishnav Vidyapeeth Vishwavidyalaya,
 Indore

[Signature]
Chairperson

Faculty of Studies
 Shri Vaishnav Vidyapeeth
 Vishwavidyalaya, Indore

[Signature]
Controller of Examinations

Shri Vaishnav Vidyapeeth
 Vishwavidyalaya, Indore

[Signature]
Registrar

Shri Vaishnav Vidyapeeth
 Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition
Semester I

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME						L	T	P	CREDITS
			Marks	THEORY			PRACTICAL					
				END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BSFNC102	Major-1	Introduction to Human Nutrition	Max	60	20	20	30	20	4	0	4	6
			Min	24	16		14	9				

Legends: L = Lecture; T = Tutorial; P = Practical

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

Module-wise Syllabus Structure:

S. No.	Descriptors/Topics	Hours	Assessment Tools
Module - 1	Introduction to Human Nutrition - Basic terms used in the study of Human Nutrition: nutrition, nutrients, health, malnutrition, undernutrition, overnutrition, balanced diet, metabolism, and nutritional status. - Understanding the relationship between food, nutrition, and health. Functions of food: Physiological, psychological, and social functions. Indian Knowledge Systems (IKS): Traditional concepts of Ahara and the role of food in maintaining health and wellness according to traditional Indian practices.	12	AT1 - 1 AT1 - 2 ATI - 3
Module - 2	Energy Metabolism and Balanced Diet - Energy and components of energy expenditure. - Basal Metabolic Rate (BMR) and factors affecting BMR. - Thermogenic effect of food. - Physical activity and energy expenditure. - Recommended Dietary Allowances (RDA). - Concept of balanced diet. - Methods of evaluation of nutritive value of foods. Application of Artificial Intelligence (AI) in dietary assessment and personalized nutrition planning.	12	AT1 - 2 AT1 - 3 ATI - 4

Chairperson

Board of Studies

Shri Vaishnav Vidyapeeth Vishwavidyalaya,
Indore

Chairperson

Faculty of Studies

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition
Semester I

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME						L	T	P	CREDITS
			Marks	THEORY			PRACTICAL					
				END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BSFNC102	Major-1	Introduction to Human Nutrition	Max	60	20	20	30	20	4	0	4	6
			Min	24	16		14	9				

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

Module-wise Syllabus Structure:

S. No.	Descriptors/Topics	Hours	Assessment Tools
Module -3	Carbohydrates and Proteins Carbohydrates • Types and classification of carbohydrates. Functions of carbohydrates. Dietary sources of carbohydrates. Clinical manifestations of deficiency and excess of carbohydrates. Proteins • Types and classification of proteins. Functions of proteins. Dietary sources of proteins. Clinical manifestations of deficiency and excess of proteins.	12	AT1 - 1 AT1 - 2 ATI - 3 ATI - 4
Module - 4	Fats and Vitamins Fats • Types of fats: saturated, unsaturated, trans fats, and essential fatty acids. • Functions of fats. • Dietary sources of fats. • Clinical manifestations of deficiency and excess fats. Vitamins • Classification of vitamins: fat-soluble and water-soluble vitamins. • Functions of vitamins and Dietary sources of vitamins. • Clinical manifestations of deficiency and excess of vitamins.	12	AT1 - 1 AT1 - 2 ATI - 3 ATI - 4

Chairperson

Board of Studies
 Shri Vaishnav Vidyapeeth Vishwavidyalaya,
 Indore

Chairperson

Faculty of Studies
 Shri Vaishnav Vidyapeeth
 Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
 Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
 Vishwavidyalaya, Indore



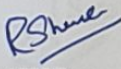
Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition
Semester I

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME						L	T	P	CREDITS
			Marks	THEORY			PRACTICAL					
				END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BSFNC102	Major-1	Introduction to Human Nutrition	Max	60	20	20	30	20	4	0	4	6
			Min	24	16		14	9				

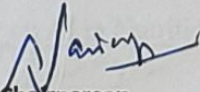
Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit; *Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Module-wise Syllabus Structure:

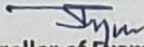
S.No	Descriptors/Topics	Hours	Assessment Tools
Module - 5	Minerals and Dietary Fiber Minerals - Types of minerals: macro and micro minerals. - Functions of minerals. - Dietary sources of minerals. - Clinical manifestations of deficiency and excess of minerals. Dietary Fiber - Types of dietary fiber: soluble and insoluble fiber. - Functions of dietary fiber. - Dietary sources of fiber. - Clinical manifestations of deficiency and excess of fiber. Indian Knowledge Systems (IKS): Nutritional significance of indigenous foods and traditional dietary practices including millets, pulses, herbs, spices, fermented foods, and seasonal eating patterns for health promotion and disease prevention.	12	AT1 - 1 AT1 - 2 ATI - 3 ATI - 4


Chairperson

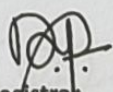
Board of Studies
Shri Vaishnav Vidyapeeth Vishwavidyalaya,
Indore


Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore


Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore


Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Home Science

Choice Based Credit System (CBCS) in Light of NEP-2020

B. Sc. Food and Nutrition

Semester I

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME						L	T	P	CREDITS
			Marks	THEORY			PRACTICAL					
				END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BSFNC102	Major-1	Introduction to Human Nutrition	Max	60	20	20	30	20	4	0	4	6
			Min	24	16		14	9				

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

Assessment Tools

AT1-1	Quiz
AT1-2	Activity Based Learning
AT1-3	Midterm Exams
AT1-4	Seminar Presentation
AT1-5	Assignments
AT1-6	Poster
AT1-7	Oral Viva-voce examination

- Prerequisite (Major): Basic knowledge of biology, food science, health concepts, and elementary chemistry related to human nutrition and well-being.

Chairperson

Board of Studies

Shri Vaishnav Vidyapeeth Vishwavidyalaya,
Indore

Chairperson

Faculty of Studies

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition
Semester I

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME						L	T	P	CREDITS
			Marks	THEORY			PRACTICAL					
				END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BSFNC102	Major-1	Introduction to Human Nutrition	Max	60	20	20	30	20	4	0	4	6
			Min	24	16		14	9				

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

List of Practical's

S. No	List of Practical's	CO Mapping
1	Market survey of locally available food items viz. cereals, pulses, fruits, vegetables, milk and milk products, fats and oils, nuts and oilseeds, sugar and jaggery, meat, fish, and poultry and miscellaneous food items like biscuits, jams, jellies, ketchup etc.	CO1, CO2, CO3
2	Introduction to different culinary terms	CO3, CO5
3	Understand Food Pyramid and IFCT by ICMR	ALL
4	Understand BMI, Measurement of height, weight, BMI, waist-hip ratio and nutritional status assessment	CO3
5	Calculation of Basal Metabolic Rate (BMR) and Calculation of Total Energy Expenditure (TEE) considering age, gender, body weight and physical activity level	CO3
6	Prepare a chart of Different nutrients according to their sources and deficiencies	All
7	AI-Based Nutrient Evaluation	All
8	Seminar/Case Study on AI in Nutrition	All

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth Vishwavidyalaya,
Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition
Semester I

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME						L	T	P	CREDITS
			Marks	THEORY			PRACTICAL					
				END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BSFNC102	Major-1	Introduction to Human Nutrition	Max	60	20	20	30	20	4	0	4	6
			Min	24	16		14	9				

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

Additional Resources

A. Value addition to course content/ Skill enhancement content:

- https://www.nin.res.in/dietaryguidelinesforindians.html?utm_source=chatgpt.com
- https://www.fao.org/nutrition/en/?utm_source=chatgpt.com

SWAYAM Course:

- https://onlinecourses.nptel.ac.in/noc26_cy24/preview
- https://onlinecourses.swayam2.ac.in/e-learning/preview/cec26_cy02
- https://onlinecourses.swayam2.ac.in/e-learning/preview/nos25_sc50

B. Remedial classes for slow learners:

- Special classes will be arranged outside regular lecture hours with a focus on fundamental concepts and problem-solving techniques.
- Individual attention will be provided to address specific difficulties faced by students.
- Bridge courses or foundation modules may be introduced for students lacking prerequisite knowledge.
- Peer learning and mentoring will be encouraged, where advanced learners assist slow learners under faculty supervision.
- Remedial sessions will be customized based on student needs, focusing on topic-wise weaknesses rather than a general approach.

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth Vishwavidyalaya,
Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition
Semester I

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME						L	T	P	CREDITS
			Marks	THEORY			PRACTICAL					
				END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BSFNC102	Major-1	Introduction to Human Nutrition	Max	60	20	20	30	20	4	0	4	6
			Min	24	16		14	9				

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

Suggested Readings

Textbooks:

- Shubhangini, A. Joshi. (2022). *Nutrition and Dietetics with Indian Case Studies*. McGraw Hill. 5th Edition.
- Srilakshmi, B. (2017). *Nutrition Science*. Delhi: New Age International Publishers.
- Bamji, M. S. Krishnaswamy, K. & Brahman, G. N. V. (2013). *Textbook Of Human Nutrition*. Oxford & IBH.
- Chadha R and Mathur P (eds) (2015). *Nutrition: A Lifecycle Approach*. Orient Blackswan, Hyderabad.

Reference Books:

- Rekhi T and Yadav H. (2014). *Fundamentals of Food and Nutrition*. Elite Publishing House Pvt Ltd.
- Potter, N. N. and Hotchkiss, J. H. (2012). *Food Science*. Germany: Springer Science & Business Media.
- Swaminathan, M. (2005). *Handbook of Foods and Nutrition*. Madras: Ganesh and Co. Pvt. Ltd

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth Vishwavidyalaya,
Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition
Semester I

Food and Nutrition Semester I												
COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME						L	T	P	CREDITS
			Marks	THEORY			PRACTICAL					
				END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BSFNC102	Major-1	Introduction to Human Nutrition	Max	60	20	20	30	20	4	0	4	6
			Min	24	16		14	9				

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Project/Practical; C - Credits
be based on the following criteria:

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

Course Articulation Matrix (Mapping of COs with POs)

Course Outcomes	Correlation with POs									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	2	1	1	1	—	—	—	—	—
CO2	3	3	1	2	2	2	1	—	—	—
CO3	2	3	1	3	3	2	2	1	2	1
CO4	2	3	1	2	3	3	2	2	2	2
CO5	2	2	2	3	3	2	2	2	3	3

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth Vishwavidyalaya,
Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore