



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

Subject Code	Category	Subject Name	Teaching and Evaluation Scheme								
			Theory			Practical		Th	T	P	CREDITS
			End Sem University Exam	Two Term Exam	Teachers Assessment	End Sem University Exam	Teachers Assessment				
MFSN 401	IV	Sports Nutrition	60	20	20	0	0	4	0	0	4

Abbreviation		Teacher Assessment (Theory) based on following components: Quiz / Assignment / Project / Participation in class (Given that no component shall exceed 10 Marks).
Th	Theory	
T	Tutorial	
P	Practical	

Course Objectives

- To learn the concepts of fitness, methods of assessing fitness, exercises for physical fitness and bioenergetics of exercise and role of macro- and micro-nutrients in sports performance
- To gain knowledge & application skills with respect to nutrition for high performance sports, through the life-cycle and diet & nutritional care of special groups of athletes.

Course Outcome

- To understand the concepts of fitness, its assessment and exercises for physical fitness training.



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

- To function effectively as a sports dietitian, with knowledge and skills, to support recreational and competitive athletes.
- To provide diet and nutritional care in terms of nutrition education, diet plans and counseling to special groups of athletes.

MFSN 401: Sports Nutrition

UNIT I

Physical fitness and its components. Methods of assessing physical fitness. Approaches to achieving physical fitness through the life cycle. Significance of physical fitness and nutrition in prevention and management of weight control regimes. Nutrition guidelines for maintenance of health and fitness.

UNIT II:

Fundamentals of Sports Nutrition: Integrated approach to care for athletes. Assessment of Sports performance. Bioenergetics and body metabolism of physical activity and sports, Macro and micro nutrients for sport performance, Temperature regulation, fluid balance, fluid requirements of athletes and rehydration strategies for sports. Specific requirements: Importance of carbohydrate loading, pre game and post game meals. Diets for persons with high energy requirements, stress, fracture and injury.

UNIT III

Nutrition for high performance athletes: Recommended allowances and nutritional guidelines for different categories of high performance sports Nutritional care during Training, weight management and day-to-day recovery. Nutrition for the Pre-competition, Competition and post competition recovery phase.

UNIT IV

Challenges in Sports Nutrition: Nutritional care for children and adolescent athletes. Athletes with special needs- Paralympics & special Olympics, vegetarian athletes, Red S. Athletes with eating disorders, athletes with diabetes and other medical conditions .

UNIT V:

Supplements and Ergogenic aids: Definitions, Use of different nutrigenic / ergogenic aids and commercial supplements, Herbs, Sports drinks, sports bars etc. Drugs and pharmaceutical compounds: natural and synthetic, use of excipients. Pharmaco-dynamics, pharmacokinetics, route and form of excretion. Drug abuse and drug resistance. Nutrigenomics: definition, concepts and theories. Nutrient effects on drug therapy: effects of dietary composition, interactions between medication and milk, iron, fruit juices, antacids.



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

Reference Books:

- ILSI, NIN & SAI. (2017) Nutritional recommendations for high performance athletes 2ed.
- Mahan, L. K. and Escott Stump S. (2016) Krause's Food & Nutrition Therapy. 14th ed.
- Saunders-Elsevier. Wolinsky I. (1997) Nutrition for exercise and Sport. 2nd ed. CRC Press.
- Burke LM and Deakin V. (2002) Clinical Sports Nutrition, 2nd edition, Publishers McGraw Hill.
- Dan Benardot. (2011) Advanced Sports Nutrition-2nd Edition.
- Fink H H and Mikesky A E. (2017) Practical Applications in Sports Nutrition 5th Edition.



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

Subject Code	Category	Subject Name	Teaching and Evaluation Scheme								
			Theory			Practical		Th	T	P	CREDITS
			End Sem University Exam	Two Term Exam	Teachers Assessment	End Sem University Exam	Teachers Assessment				
MFSN 402	IV	Nutrition Communication and Diet Counseling	60	20	20	0	0	4	0	0	4

Abbreviation		Teacher Assessment (Theory) based on following components: Quiz / Assignment / Project / Participation in class (Given that no component shall exceed 10 Marks).
Th	Theory	
T	Tutorial	
P	Practical	Teacher Assessment (Practical) based on following components: Viva/ File/ Participation in Lab work (Given that no component shall exceed 50% of Marks).

Course Objective

- To equip the students to understand the influence of counseling on disease management and identify components of counseling skills.
- To provide skills of counseling for specific disease conditions.

Course Outcome



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

- To provide knowledge on the basics of communication strategies and best suited methods of communicating with individuals to select appropriate strategies presented with dietary problems.
- To understand how best to maintain adherence to changed dietary practices for specific physiological conditions.

MFSN 402: Nutrition Communication and Diet Counseling

UNIT I

Basics of Communication: Meaning, forms and methods of Communication. Current and emerging methods/tools of communication. Characteristics of effective communication, Skills and attributes of a communicator. Approaches in communication . Barriers to effective communication.

UNIT II

Nutrition Counseling: Concept and importance of counseling in the nutrition care process. Understanding dietary patterns and food choices and their impact on counseling. Behaviour change communication and models. Counseling strategies and factors to be considered for counseling. Conventional and non-conventional tools in counseling.

UNIT III

Processes involved in dietary counseling: Managing resources of the communicator/counselor. Designing of counseling plans: goals & objectives, evaluation instruments. Implementation: facilitating self-management of disease condition. Evaluation: evaluating adherence to dietary changes. Counseling approaches after evaluation

UNIT IV

Dietary counseling through the life span: Prenatal and pregnant women, Lactating women, Childhood nutrition problems like SAM, weight management, vitamin and mineral deficiencies, School children, adolescents, young adults, Fitness, weight management, eating disorder, Managing diet related chronic diseases in adults: Obesity, Diabetes, Dyslipidemia, Hypertension, Cancer risk prevention, Renal disease, Liver disorders and Geriatric counseling.

UNIT V

Nutritional/medicinal role of traditional foods: traditional food beliefs, role of Ayurveda, Naturopathy, Yoga and other traditional medicines in disease management.



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

Reference Books :

- Mahan, L. K. and Escott Stump. S. (2016) Krause's Food & Nutrition Therapy 14th ed.
- Snetselaar L. (2009). Nutrition Counseling Skills for the Nutrition Care Process. Fourth Ed. Sudbury, Massachusetts: Jones Bartlett Publishers.
- Holli B Betsy and Beto A Judith. (2014). Nutrition Counseling and Education Skills for Dietetics Professionals. Sixth edition.
- Gable J. (2016). Counseling Skills for dietitians. Florida, USA.
- Midwinter R and Dickson J.(2015). Embedding Counseling and Communication Skills. Relational Skills Model. Routledge.
- Devito Joseph A. (2015) Human Communication: The Basic Course. New York: Pearson
- King K and Klawitter B.(2007). Nutrition Therapy. Advanced Counseling Skills. Third Edition. Philadelphia.



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

Subject Code	Category	Subject Name	Teaching and Evaluation Scheme								
			Theory			Practical		Th	T	P	CREDITS
			End Sem University Exam	Two Term Exam	Teachers Assessment	End Sem University Exam	Teachers Assessment				
MFSN 403	IV	Food Processing and Technology II	60	20	20	0	0	4	0	0	4

Abbreviation		Teacher Assessment (Theory) based on following components: Quiz / Assignment / Project / Participation in class (Given that no component shall exceed 10 Marks).
Th	Theory	
T	Tutorial	
P	Practical	

Course Objectives

- To provide knowledge of principles and technical aspects of processing of milk and milk products and fruits and vegetable preservation.

Course Outcome

- Students able to draft various aspects of processing and quality of milk and milk products.
- Ingrain the understanding of post-harvest management of fruits and vegetables.



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

MFSN 403: Food Processing and Technology II

Unit I: Dairy Technology

Milk and milk products: Milk, Types, Indian standards, Composition, factors affecting composition of milk, physico-chemical properties of milk and its constituents. Milk processing: Clean milk practices, buying and collection, platform tests, pre-heating, filtration, clarification, standardization, bacto-fugation, homogenization, pasteurization, cooling, packaging and storage. Cleaning and sanitization of dairy equipment including CIP and COP.

UNIT II

Milk products (Cream, butter, ice cream, curd, cheese, Panir, khoa and ghee)-Introduction, definition, classification, methods of manufacture and its quality aspects.

Unit III: Post Harvest Technology of Fruits and Vegetables and its Value addition

Introduction to Fruits and Vegetables: Classification of fruits and vegetables, general composition, enzymatic browning and its prevention.
Importance of post-harvest processing of fruits and vegetables, extent and possible causes of post harvest losses. Pre-harvest factors affecting postharvest quality, maturity, ripening and changes occurring during ripening; Respiration and factors affecting respiration rate; Storage (ZECC, cold storage, CA, MA, and hypobaric); Value addition concept, Principles and methods of preservation of agricultural produce.

UNIT IV

Fruit Beverages: Introduction, fermented and non-fermented beverages.
Processing of fruit juices (selection, juice extraction, deaeration, straining, filtration and clarification), preservation of fruit juices (pasteurization, chemically preserved with sugars, freezing, drying, tetra-packing, carbonation), processing of squashes.
Jams, Jelly, Marmalades, Preserve and Candy: processing and quality control.

UNIT V

Tomato products: Selection of tomatoes, pulping & processing of tomato juice, tomato puree, paste, ketchup, sauce and soup.
Canning: Selection of fruits and vegetables, process of canning, containers of packing, lacquering, syrups and brines.
Drying/ Dehydration of fruits and vegetables – Concept and methods, osmotic drying.

Reference Books :

- Siddapa, GS (1986) Preservation of Fruits and Vegetables, ICAR Publication



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

- Van Loesecke HW (1998) Food Technology Series Drying and Dehydration of foods. Allie Scientific Publishers
- Salikhe D K and Kadam SS (1995) Handbook of fruit science and technology. Production Composition, Storage and processing. Marcel Decker inc, New York
- Marriott N G (1985) Principles of Food Sanitation 1st Edition. A VI publication USA.
- De SK (2001) Outlines of Dairy Technology, Oxford University Press, New Delhi



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

Subject Code	Category	Subject Name	Teaching and Evaluation Scheme								
			Theory			Practical		Th	T	P	CREDITS
			End Sem University Exam	Two Term Exam	Teachers Assessment	End Sem University Exam	Teachers Assessment				
MFSN 404	IV	Nutrition Program Management	60	20	20	0	0	4	0	0	4

Abbreviation		Teacher Assessment (Theory) based on following components: Quiz / Assignment / Project / Participation in class (Given that no component shall exceed 10 Marks).
Th	Theory	
T	Tutorial	
P	Practical	Teacher Assessment (Practical) based on following components: Viva/ File/ Participation in Lab work (Given that no component shall exceed 50% of Marks).

Course Objective

1. To equip the student about necessary knowledge and skills required to manage health and nutrition programs in developing country situations.
2. To develop the skills for critical evaluations of the existing nutrition health programs.

Course Outcome

- To understand the management of nutrition programmes.
- To gain in depth knowledge of different nutrition supplementation programme.



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

MFSN 404: Nutrition Program Management

Unit I

Nutrition Program: Principles and concepts. Nutrition Program Management: definitions, principles, components (Planning, Implementation and Evaluation). The concept of team approach involving communities : Identifying the partners for building a nutrition health team, role of partnerships in management of nutrition program, Attitudes & skills required to be a successful program manager with a focus on building or leading a team.

Unit II

Planning for Nutrition/ Health Programs. Overview of various program management models. Planning at various levels: National, State, District, Block, Sector and Community based. Approaches used in planning: Top down vs bottom up, need-based approach, community participation, rights based approach. Planning Strategies: Vertical Vs Integrated, Planning for short term and long term objectives/goals.

Unit III

Implementation, Monitoring and Evaluation for Nutrition/ Health Programs : Training, supervision coordination, managing space, money, time, personnel, transport, cost benefits, cost effectiveness and cost efficiency . Operations research and its contribution to nutrition program management. Management Information Systems (MIS) at various levels and its applications. Evaluation: Process and Impact, Reporting and dissemination of results. Critique of the existing nutrition health programs: Merits, demerits and best practices .

Unit IV

Co Community Participation (CP), Sustainability and Replicability. Convergen : Concepts, importance and approaches for CP. Scaling up of programs: replicabilty and sustainability issues. Centralization and decentralization, vertical and horizontal linkages, inter-sectoral linkages, involvement of corporate sectors.

UNIT V

Nutrition supplementation programs in India: Integrated Child Development Services Scheme (ICDS); Mid-day meal Programs (MDM); Special Nutrition Programs (SNP); Wheat Based Nutrition Programs (WNP); Applied Nutrition Programs (ANP); Balwadi Nutrition Programs (BNP); National Nutritional Anaemia Prophylaxis Program (NNAPP); National Program for



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

Prevention of Blindness due to Vitamin A Deficiency; and National Goiter Control Program (NGCP). The history of the respective programs, their beneficiaries, objectives, activities, organization and evaluation.

Reference Books:

- Program Sustainability Assessment Tool and sustainability planning, visit <http://www.sustaintool.org>
- Kettner PM, Moroney RM, Martin LL (1990). Designing and managing programs: An effectiveness based approach, Newbury CA, Sage
- Mc Mohan R et al. (1981). On being in charge: A guide for middle level management in primary health care. Geneva : World Health Organization
- Bagchi K (1990). Guidelines for the management of nutrition programs, Geneva : WHO- EMRO Technical Publication No. 2.



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

Subject Code	Category	Subject Name	Teaching and Evaluation Scheme								
			Theory			Practical		Th	T	P	CREDITS
			End Sem University Exam	Two Term Exam	Teachers Assessment	End Sem University Exam	Teachers Assessment				
MFNL 405	IV	Food Nutrition Lab	0	0	0	90	60	0	0	12	4

Abbreviation		Teacher Assessment (Theory) based on following components: Quiz / Assignment / Project / Participation in class (Given that no component shall exceed 10 Marks).
Th	Theory	
T	Tutorial	
P	Practical	

Teacher Assessment (Practical) based on following components: Viva/ File/ Participation in Lab work (Given that no component shall exceed 50% of Marks).

PRACTICALS

- a) Food Processing and technology
 1. Quality analysis of milk and determination of its components like fat, SNF, protein, TSS.
 2. Detection of preservatives in milk (e.g. boric acid and borate).
 3. Detection of adulterants in milk (like starch, sugar, soda, detergent, urea).
 4. Analysis of cream, cheese, paneer, khoa as per BIS standards.
 5. Visit to milk industry to understand process of pasteurization and homogenization.
 6. Experiment on control of enzyme activity, enzyme inactivation in fruits and vegetables.
 7. Estimation of acidity, total solids of different foods – Squashes, syrups and juices.
 8. Dehydration of fruits and vegetables and its effect on color texture and rehydration ratio.



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

9. New product development using principles of preservation of fruits and vegetables by low temperature/heat//salt and sugar.
10. Processing of tomato products (ketchup and sauce).
11. Processing of jams, jellies and marmalades.
- 12. Processing of pickles and brines**

b) Food Nutrition Practicals

1. PARQ assessment and interpretation for fitness.
2. Planning a day's diet for a fitness trainee who works out twice in a gymnasium.
3. Planning a training day's diet for an individual high performance athlete(any one sport)
4. Planning a weight loss diet for a high performance athlete.
7. Planning a pre-, and post-competition meal for ultra-endurance, endurance, strength events, team events and sports-drinks during and after an event.
8. Planning a diet for multiple events like swimming competitions.
9. Survey of sports supplements .



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

Subject Code	Category	Subject Name	Teaching and Evaluation Scheme								
			Theory			Practical		Th	T	P	CREDITS
			End Sem University Exam	Two Term Exam	Teachers Assessment	End Sem University Exam	Teachers Assessment				
MFNP 406	IV	Project II and Presentations	0	0	0	30	20	0	0	0	6

Course Objective

- The aim of dissertation or project is to develop skills in conducting a research study/ working in a project and to learn the process of writing a dissertation/ project report.

Course Outcome

- To know the practical aspects of, collecting data/ project work.
- To evaluate, select and use appropriate strategies for reduction, analysis and presentation of data collected during research process/ project work.
- To prepare a dissertation document/ project report based on research process/ project work done.



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
DUAL DEGREE PROGRAM (B.Sc-M.Sc Food and Nutrition)
M. Sc Food and Nutrition Sem IV (2020-2022)

Subject Code	Category	Subject Name	Teaching and Evaluation Scheme								
			Theory			Practical		Th	T	P	CREDITS
			End Sem University Exam	Two Term Exam	Teachers Assessment	End Sem University Exam	Teachers Assessment				
MFNV 407	IV	Comprehensive Viva	0	0	0	60	40	0	0	0	2

Note: Comprehensive Viva of the candidates in presence of subject expert and faculty members.