

B.SC. NUTRITION AND DIETETICS

Semester	Course Code	Course Category	Hours	Credits	Marks for Evaluation		
					CIA	ESE	Total
III	25UNDVAC1	Value added Course - I	30	-	-	100	100
Course Title		Traditional and sustainable food systems					

SYLLABUS		
Unit	Contents	Hours
I	Introduction to Traditional and Sustainable Food Systems Definition and principles of traditional and sustainable food systems: Based on Local and seasonal, diversified farming, agro ecological practices, minimal processing, community and cultural significance Components of sustainable food systems –Production, Processing, Distribution, Access & preparation, consumption, food waste recovery	6
II	Traditional Food Systems Traditional food processing and preservation techniques: Drying, fermentation, curing, pickling, milling, thermal processing Role of traditional food systems in promoting food security and cultural heritage	6
III	Sustainable Food Production Principles of sustainable agriculture: organic, permaculture, and regenerative agriculture Definition of mulching and composting. Pest management and methods. Principles of Urban agriculture and community-supported agriculture (CSA) programs	6
IV	Sustainable Food Processing and Consumption Sustainable food processing: minimal processing, energy efficiency, water conservation, waste reduction in local food systems, and food co-operatives Sustainable food consumption pattern: ways to reduce food waste, mindful eating, eating seasonally, using sustainable option and supporting local food systems	6
V	Food Policy and Governance Food policy and governance: national frame work: National Food Security Act (NFSA), the Public Distribution System (PDS), and the Midday Meal Scheme. International framework Food and Agriculture organization and its objectives Role of government, civil society, and private sector in promoting sustainable food systems, Advocacy and activism for sustainable food systems	6

Text Book(s):

1. Terry Marsden and Adrian Morley. 2010. Sustainable Food Systems: Building a New Paradigm., Routledge publisher
2. David W. Schienke and Karen L, 2014. Food Systems: A Global Life Cycle Perspective, CRC Press

References book:

The Oxford Handbook of Food, Politics, and Society. 2015. Ronald J. Herring, Oxford University Press

Web Reference:

<https://link.springer.com/book/10.1007/978-3-031-47122-3>
<https://www.routledge.com/Routledge-Handbook-of-Sustainable-and-Regenerative-Food-Systems/Guthman/p/book/9780367335037>
https://en.wikipedia.org/wiki/Fair_Food:_Growing_a_Healthy,_Sustainable_Food_System_for_All
<https://shop.oakmeadow.com/sustainable-food-systems/sustainable-food-systems-coursebook-digital/>

Course Outcomes	
Upon successful completion of this course, the student will be able to:	
CO No.	CO Statement
CO1	Highlight the concept of traditional and sustainable food systems
CO2	Categorize the importance of preserving cultural heritage and biodiversity in food systems
CO3	Integrate the impact of industrialized food systems on the environment, health, and society
CO4	Explore innovative approaches to sustainable food production, processing, and consumption
CO5	Assess the skills in designing and implementing sustainable food systems

Course Coordinator: Dr. A. Sangeetha

Semester	Course Code	Course Category	Hours	Credits	Marks for Evaluation		
					CIA	ESE	Total
V	25UNDVAC2	Value Added Course-II	30	-	-	100	100
Course Title							
TECHNOLOGIES OF MILLET VALUE ADDED PRODUCTS							

SYLLABUS		
Unit	Contents	Hours
I	Millet value addition: Concept, Need and scope and its importance, Processing challenges in Millet value addition, Health benefits of millets, Promotion of Millet consumption, Government Schemes and Policies for Millet Promotion (PMFME, ODOP, Millets Mission).	6
II	Millet Business: Concept, Millet Marketing strategy, Steps involved in starting millet business, Export Potential of Millet Products, Sustainable Packaging for Millet Products Challenges and success stories of Millet entrepreneurs in India- (any 2)	6
III	Technologies involved in millet value added products: [Principle, procedure (flow chart) and nutritional advantages only] Dehulling, Germination and fermentation, Flour-making, dehydration, Extrusion-puffing and flaking, Encapsulation, Biofortification, Baking and 3D food printing, Role of Artificial Intelligence (AI) and Internet of things (IoT) in Millet Processing.	6
IV	Application of Basic food technologies of the products and its recipe preparations: (Skill based activities-I) Whole millet grain -Bajra sprouted sundal, ragi sprouted drumstick greens adai, bajra dosa, varagu khichdi, Broken millet - bajra koozh, jowar kuzhipanniyaram , Millet Flour -ragi mudde, foxtail millet soup (instant mix), jowar peda, jowar kulfi, varagu sago papad, Traditional Millet Beverages -ragi ambali, sattu mavu kanji. Extruded products: Pops - masala puffed sorghum, Flakes - barnyard millet flakes pulao. Snacks - foxtail millet murukku and cutlet.	6
V	Application of Advance food technologies in recipe development: (Skill based activities-II) Baking -jowar muffins, jowar biscuit, barnyard millet brownie. Biofortification -Powdered gingelly seed fortified with jowar flour roti. Extruded products: Convenience foods - multi millets noodles-millet egg noodles, pasta- pesto pasta (maida & preservative free).	6

Text Book(s):

- 1.Rajendra R Chapke et al., “Latest millet production and processing technologies”, ICAR- Indian Institute of Millets Research, Rajendranagar, Hyderabad – 500 030. India, 2020
- 2.B Dayakar Rao et al., “Technologies of Millet Value Added Products”, ICAR- Indian Institute of Millets Research, Rajendranagar, Hyderabad – 500 030. India, June 2016.
- 3.[P. K. Chattopadhyay](#) , “Millet Production, Processing and Value-Added Products Handbook , NIIR Project Consultancy Services, January 2024 ISBN: 978-81-969153-4-6

Net Reference:

<https://www.udyogwardhini.com › course › milletsproc...>

Course Outcomes	
Upon successful completion of this course the student will be able to:	
CO No.	CO Statement
CO1	Outline on the need, scope and its importance in promoting millets consumption.
CO2	Illustrate the millet business strategy and learn about the challenges and success stories of millet entrepreneurs in India.
CO3	Explain the various technologies used in preparing the millet value added products.
CO4	Apply basic technologies in development of value-added products and to develop millet recipes.
CO5	Adapt advance technologies in the development of millet products and its recipes.

Course Coordinator: B. Rajalakshmi

M.SC. NUTRITION AND DIETETICS

Semester	Course Code	Course Category	Hours	Credits	Marks for Evaluation		
					CIA	ESE	Total
III	25PNDVAC1	Value Added course - I	30	-	-	100	100
Course Title Nutrition Psychology for Effective Diet Adherence							

SYLLABUS		
Unit	Contents	Hours
I	Psychology of Eating Behaviour Psychological & biological factors shaping food choices, Role of genetics, hormones, and neurotransmitters in eating behaviour , Cultural and cross-cultural perspectives on dietary habits , Influence of hydration on satiety and food intake.	6
II	Perception, Self-Concept, and Eating Patterns Self-perception & self-concept in relation to dietary choices , Psychological theories (e.g., Freud's model, defense mechanisms) , Impact of emotions and mood disorders (stress, anxiety, depression) on eating patterns	6
III	Consumer Behaviour & Dietary Decision-Making Psychological impact of food marketing and advertising , Cravings, impulse buying, and food preferences , Influence of food labels, advertisements, and social media on diet adherence	6
IV	Intervention Strategies in Nutrition Psychology 1. Identifying barriers and developing strategies for the community - Health Belief Model, Stages of Change, Theory of Planned Behavior) 2. Community Counselling for students - Motivational Interviewing Techniques 3. Group discussion : Nourish Your Mind , Building Awareness for Personalized Nutrition Interventions	6
V	Practical Applications in Behavioural Nutrition 1. Decoding Eating Patterns: Analyzing Dietary Behaviors with the DEBQ (Dutch Eating Behaviour Questionnaire) and EAT-26 (Eating Attitude Test) questionnaires 2. Case analysis and Presentation - Eating disorders, Binge eating , Emotional Eating 3. Mindful eating techniques - The Raisin experiment , The 20 - Chew challenge , The HALT method , Mindful bite and pause	6

Text Books:
<ol style="list-style-type: none"> 1. Nutrition Psychology: Improving Dietary Adherence" by Melinda C. Blackman and Colleen Kvaska 2. The Psychology of Nutrition" by David Booth 3. The Psychology of Food Choice" edited by Richard Shepherd and Monique Raats 4. Nutrition Essentials for Mental Health: A Complete Guide to the Food-Mood Connection" by Leslie Korn 5. Handbook of Behavior, Food and Nutrition" edited by Victor R. Preedy, Ronald Ross Watson, and Colin R. Martin
Reference books:
<ol style="list-style-type: none"> 1. Stroebe, W. (2018). <i>Dieting, Overeating, and Obesity: The Psychology of Eating</i>. Cambridge University Press. 2. Davis, C., & Fox, J. (2020). <i>Neuropsychology of Eating Disorders and Obesity</i>. Springer. 3. Rolls, E. T. (2016). <i>Brain Computations in Eating Behavior: The Role of Reward Systems</i>. Oxford University Press. 4. Mann, T., & Ward, A. (2019). <i>Mind over Food: The Psychology of Eating Choices</i>. APA Press. 5. Benton, D. (2021). <i>The Influence of Nutrition on Mental Health and Cognition</i>. Academic Press.

Journals:
1. Appetite (Elsevier) – Covers psychological and physiological aspects of eating behavior.
2. The American Journal of Clinical Nutrition (Oxford Academic) – Publishes research on nutrition and mental health.
3. International Journal of Behavioral Nutrition and Physical Activity (BMC) – Focuses on behavioral interventions in nutrition.

Course Outcomes	
Upon successful completion of this course, the student will be able to:	
CO No.	CO Statement
CO1	Understand the basic psychological principles related to food choices and eating behavior
CO2	Apply psychological concepts to assess emotional and cognitive influences on diet
CO3	Analyze the impact of stress, mood, and motivation on dietary habits
CO4	Evaluate the role of behavioral interventions in modifying eating behavior
CO5	Develop counseling strategies for promoting healthy eating behaviors

Course Coordinator: J. Sanjana