

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Shri Vaishnav Institute of Home Science

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

DUAL DEGREE PROGRAM (B.Sc. - M.Sc. Food and Nutrition)

B. Sc. Food and Nutrition Sem IV (2021-2024)

Subject Code	Category	Subject Name	Teaching and Evaluation Scheme								
			Theory			Practical		L	T	P	CREDITS
			End Sem University Exam	Two Term Exam	Teachers Assessment	End Sem University Exam	Teachers Assessment				
FSN 401	CC	Community Nutrition	60	20	20	0	0	3	0	0	3

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 Educational Objectives (CEOs): The students will -

CEO1: understand community at large, its health indices, prevalent nutritional problems their assessment.

CEO2: gain knowledge about community nutrition services policies and programs.

Course Outcomes (COs): Student should be able to-

CO1: acquire knowledge about community health, nutritional assessment, and surveillance.

CO2: understand dietary surveys and food security.

CO3: familiarize with clinical symptoms of PEM and other diseases.

CO4: develop skills of anthropometric assessment.

CO5: gain awareness on national and international nutritional programs.

Syllabus

UNIT I

Concept of community, types of Community, factors affecting health of the community. Nutritional assessment and surveillance: meaning, need, objectives and importance.

UNIT II

Nutritional Survey: need and importance and methods of dietary survey. Interpretation - concept of consumption unit, individual and total distribution of food in family, adequacy of diet in respect to RDA, concept of family food security.

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UNIT III

Clinical Signs and symptoms of nutritional deficiencies like PEM (Kwashiorkor & marasmus), Vitamin A deficiency, rickets, B-Complex deficiencies, anemia, and iodine deficiency. Descriptive list of clinical signs and its interpretation.

UNIT IV

Nutritional anthropometry: need and importance, standard for reference, techniques of measuring height, weight, head, chest and arm circumference, interpretation of these measurements. Use of growth charts.

UNIT V

International, National, regional agencies and organizations for community nutrition. Nutritional intervention programs to combat malnutrition.

References:

- Boyle Marie A., (2021). *Community Nutrition in Action*. 8th Edition. Health & Fitness - Cengage Learning.
- King, M.H. Morley, D. and Burges, A.P., (2015). *Nutrition for Developing Countries*, Oxford: ELBS Oxford University Press.
- Mahajan, B.K., Saha R.N., and Gupta, M.C., (2013). *Textbook of Preventive and Social Medicine*, India: Jaypee Brothers Medical Publishers.
- Wadhwa, A., (2013). *Nutrition in the Community*. New Delhi: Elite Publishing House.
- Seshubabu, V. (2011). *Review on Community Medicine*. India: Paras Medical Books Pvt Ltd.

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FSN 402(P)	CC	Community Nutrition	0	0	0	30	20	0	0	4	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

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FSN 401 (P): Community Nutrition

- Anthropometric measurement of infant - length, weight, circumference of chest, mid-upper arm circumference and precautions to be taken.
- Comparison with norms and interpretation of the nutritional assessment data and its significance. Weight for age, height for age, weight for height, body Mass Index (BMI) Waist - Hip Ratio (WHR). Skin fold thickness.
- Growth charts - plotting of growth charts, growth monitoring and promotion.
- Clinical assessment and signs of nutrient deficiencies specially PEM (Kwashiorkor & marasmus). Vitamin A deficiencies, anemia, rickets and B-Complex deficiencies.
- Estimation of food and nutrient intake: Household food consumption data, adult consumption unit, 24 hours dietary recall 24 hours record, weighment method, food diaries, food frequency data, use of each of the above and information available through each individual collection of data.

Suggested readings:

- Boyle Marie A., (2021). *Community Nutrition in Action*. 8th Edition. Health & Fitness - Cengage Learning.
- King, M.H. Morley, D. and Burges, A.P., (2015). *Nutrition for Developing Countries*, Oxford: ELBS Oxford University Press.
- Mahajan, B.K., Saha R.N., and Gupta, M.C., (2013). *Textbook of Preventive and Social Medicine*, India: Jaypee Brothers Medical Publishers.
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FSN 402 E1	DSE	Food Safety & Quality Control	60	20	20	0	0	3	0	0	3

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 Educational Objectives (CEOs): The students will

CEO1: get oriented with the basic principles of quality control.

CEO2: understand the importance of good personal hygiene and ensuring food safety.

CEO3: be familiar about different Indian and International food laws.

Course Outcomes (COs): Student should be able to

CO1: gain knowledge about quality control and quality assurance.

CO2: develop skills of different evaluation methods.

CO3: develop skills of color, flavor and texture analysis.

CO4: familiarize about food safety laws, acts and certifications.

Syllabus

UNIT I

General concepts of quality and quality control and its functions. Quality Assurance and Total Quality Control. Importance of quality control lab and research and development lab in food industry.

UNIT II

Concept of organoleptic and objective properties: physical, chemical, nutritional, microbial, and sensory evaluation. Methods of evaluation in different types of food: manufacturing product, raw materials and testing of finished products.

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FSN 402 E1	DSE	Food Safety & Quality Control	60	20	20	0	0	3	0	0	3

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.

UNIT III

Color: Importance and need of color determination, methods of color determination with Hunter Color lab, CIE system and their applications.

Flavor: Importance of flavor, food flavors and flavors, measurement of food flavors.

Texture: Food texture, working of texture measuring instruments such as Texture Analyzer.

UNIT IV

Food safety and Quality Control: Quality assurance from farm to table, GHP, GMP, GAP, TQM, HACCP and SOP.

UNIT V

Food standards and laws: Codex alimentarius, FSSAI, ISO 9000, ISO 22000, ISO 14000.

Introduction of BIS/IS, FSSA, FSSC, FPO, MPO, MMPO and Agmark.

References:

- Mathur, P. (2018). *Food Safety and Quality Control*. India: The Orient Black Swan.
- Amihud K. and Bernard T. (2017). *Quality Control for the Food Industry - Fundamentals & Applications*. New Delhi: MEDTEC publisher.
- Prabhakar, K. (2017). *A Practical Guide to Food Laws and Regulations*. India: Bloomsbury India.
- Bhatia, R. and Ichhpujan, R. L. (2014). *Quality Assurance*. New Delhi: CBS Publication.
- Philip, A.C. (2011). *Reconceptualizing Quality*. Bangalore: New Age International, Publishers

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FSN 401 (P)	CC	Food Safety & Quality Control	0	0		30	20	2	0	0	2

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.

- Introduction to glassware's used in laboratory
- Estimation of moisture in food stuffs.
- Estimation of bulk density of foods.
- Estimation of ph. in foods.
- Physical analysis of grains, flour and raw material.
- Chemical analysis: Fat and Protein.
- Estimation of ash in foods.
- Sensory evaluation.

References:

- Pomeranz, Y. and Molean, C. E. (2017). *Food analysis theory and practice*. AVI Publications
- Raganna S. (2017). *Handbook of Analysis and Quality Control for Fruit and Vegetable Products*. Noida: McGraw Hill Education
- Josly, M.A. (2012). *Methods in Food Analysis: Physical, Chemical and Instrumental Methods of Analysis*. Cambridge: Academic Press.
- Gruenwedels, D.W. and Whitakor, J.R (2004). *Food analysis: Principles and techniques*. New York: Marcel Dekker Publications.

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FSN 402 E2	DSE	Bakery Science	60	20	20	0	0	3	0	0	3

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 Educational Objectives (CEOs): The students will

CEO1: understand about bakery skill and industry.

CEO2: learn processing method of different baked goods.

CEO3: know the faults and remedial measures during making of bakery products.

Course Outcomes (COs): Student should be able to

CO1: understand basic baking ingredients and present trends of baking industry.

CO2: gain knowledge about wheat structure and its chemistry with processing of biscuits and cookies.

CO3: understand technology of bread making with different methods.

CO4: develop skills for cake preparation and cake decoration.

CO5: acquire knowledge about commercial bakery equipment, machinery and quality control of baked goods.

Unit I

Bakery: Introduction, present trends, prospects. Nutrition facts of bakery products. Importance of different bakery ingredients and types of bakery products.

Unit II

Wheat grain: composition and its structure. Milling of wheat; types of refined wheat flour; composition of refined wheat flour (gluten, amylose/ amylopectin, enzyme activity, moisture) and its storage.

Biscuits and Cookies: types, processing, faults and remedial measures.

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FSN 402 E2	DSE	Bakery Science	60	20	20	0	0	3	0	0	3

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.

Unit III

Bread processing steps kneading, knocking, proofing etc. Characteristics of good bread. Defects in bread their causes and remedies. Yeast: characteristics, types, preparation, handling & storage.

Unit IV

Cakes - types of cakes, steps in cake making, balancing of cake formula; evaluation of the cake. Operational faults in cake processing and the remedial measures. Cake decoration.

UNIT V

Bakery equipment and machinery. Different types of mixers, kneaders and cutters. Different types of ovens. Packaging machinery for bread and biscuits. Quality control in bakery industry.

Suggested reading.

- Dubey, SC. (2017). *Basic Baking-Science and Craft*. Delhi: Society of Indian Bakers.
- Khanna, K. Gupta, S. Seth, R. Mahana, R. and Rekhi, T. (2014). *The Art and Science of Baking*. Delhi: Phoenix Publishing House Private Limited.
- Edward, P. (2012). *The Science of Bakery Products*. Cambridge: RSC Publishing.
- Ketrappaul, N. Grewal, B. and Jood S. (2005). *Bakery Science and Cereal Technology*. Delhi: Daya Publishing House.
- Matz A. (2004). *The Chemistry and Technology of Cereals as Food and Feed*. Delhi: CBS Publishers.

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FSN 403	CC	Meal Planning	60	20	20	0	0	3	0	0	3

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 Educational Objectives (CEOs): The Students will -

CEO1: able to identify quantity food production techniques, terminology, and equipment.

CEO2: able to quantify recipes and calculate recipe costs.

Course Outcomes (COs): Student should be able to-

CO1: demonstrate the ability to plan nutritious, appealing food combinations and menu patterns that meet the needs of the defined client.

CO2: comprehend about food purchasing, buying, receiving and storage.

CO3: gain knowledge of different types of cooking methods

CO4: acquainted with different types of food preparation.

CO5: learn the catering functions and styles of food services.

Syllabus

UNIT I

Meal and Menu Planning: definitions considerations, patterns and types, mechanics of menu planning, menu format, menu design and computers in menu planning.

UNIT II

Food Purchasing: importance, planning, management decisions. Buying methods and specifications, regulatory measures, ethics in buying. Food Receiving and Storage: mechanism of receiving, storage areas and issuing supplies.

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UNIT III

Methods of cooking: application of cookery principles for quantity food production for various food groups. Methods of cooking- moist, dry heat and using fat as a medium.

UNIT IV

Quantity Food preparation: standardized recipes, principles of meat cookery, soup preparation, vegetable and fruit cookery, cereal and cereal product cookery, baked goods and desserts, salads and salad dressing preparations.

UNIT V

Equipment for food service. Types of service: formal and informal service. Food and beverage service for special catering functions for birthday, like wedding, receptions and outdoor catering parties. Style of service: Indian, far east and continental menus.

Suggested reading:

- Kariya, P. (2016). *Meal Planner. India:* Kahootie Co.
- Terrel, M.E. and Haigu, V.F. (2016). *Professional Food preparation.* New York: John Wiley and sons.
- Marzia M. Canty, Mc, and Brighton, R. (2010). *Introduction to Catering.* London: Oxford Blackwell, Scientific Publications.
- Khanna, K. (2007). *Textbook of Nutrition and Dietetics.* New Delhi: Elite publishing house.

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