VIDYASAGAR UNIVERSITY

Paschim Midnapore, West Bengal

PROPOSED CURRICULUM & SYLLABUS (DRAFT) OF

BACHELOR OF SCIENCE (HONOURS)

MAJOR IN NUTRITION

4-YEAR UNDERGRADUATE PROGRAMME

(w.e.f. Academic Year 2023-2024)

Based on

Curriculum & Credit Framework for Undergraduate Programmes

(CCFUP), 2023 & NEP, 2020

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VIDYASAGAR UNIVERSITY
BACHELOR OF SCIENCE (HONOURS) MAJOR IN NUTRITION
(under CCFUP, 2023)

Level	YR.	SEM	Course Type	Course Code	Course Title	Credit	L-T-P	Marks		
								CA	ESE	TOTAL
B.Sc. (Hons.)	1st	I	**SEMESTER-I**							
			Major-1	NUTHMJ101	**T: Basic Nutrition Part-I** **P: Basic Nutrition Part-1(Practical)**	4	3-0-1	15	60	75
			SEC	NUTSEC01	**P: Community Nutrition Programme**	3	0-0-3	10	40	50
			AEC	AEC01	Communicative English -1 (***common for all programmes***)	2	2-0-0	10	40	50
			MDC	MDC01	Multidisciplinary Course -1 (***to be chosen from the list***)	3	3-0-0	10	40	50
			VAC	VAC01	ENVS (***common for all programmes***)	4	2-0-2	50	50	100
			Minor (Disc.-I)	NUTMI01	**T: Fundamental Nutrition Part-I; P: Practical** ***(To be taken by students of other Disciplines)***	4	3-0-1	15	60	75
			Semester-I Total			20				400
		II	**SEMESTER-II**							
			Major-2	NUTHMJ102	**T: Basic Nutrition Part-II** **P: Basic Nutrition Part-II (Practical)**	4	3-0-1	15	60	75
			SEC	NUTSEC02	**P: Food Adulteration and Community Health**	3	0-0-3	10	40	50
			AEC	AEC02	MIL-1 (***common for all programmes***)	2	2-0-0	10	40	50
			MDC	MDC02	Multi Disciplinary Course-02 (***to be chosen from the list***)	3	3-0-0	10	40	50
			VAC	VAC02	Value Added Course-02 (***to be chosen from the list***)	4	4-0-0	10	40	50
			Minor (Disc.-II)	NUTMI01	**T: Fundamental Nutrition Part-II; P: Practical** ***(To be taken by students of other Disciplines)***	4	3-0-1	15	60	75
			Summer Intern.	CS	Community Service	4	0-0-4	-	-	50
			Semester-II Total			24				400
			TOTAL of YEAR-1			44				800

MJ = Major, MI = Minor Course, SEC = Skill Enhancement Course, AEC = Ability Enhancement Course, MDC = Multidisciplinary Course, VAC = Value Added Course; CA= Continuous Assessment, ESE= End Semester Examination, T = Theory, P= Practical, L-T-P = Lecture-Tutorial-Practical, MIL = Modern Indian Language, ENVS = Environmental Studies

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Programme Specific Objectives:

i. Understand the role of nutrient for community welfare
ii. Carrier opportunities in Public Health and Nutrition Community Nutrition Sectors.
iii. Enable entrepreneurship development in the field of food science and nutrition.
iv. Pursue higher education and research in the different domains of nutrition and public health
v. Skill based knowledge up gradation.

Detailed Syllabus

MAJOR (MJ)

MJ-1: Basic Nutrition Part-I **Credits 04 (Full Marks: 75)**

COURSE LEARNING OUTCOMES:

After the completion of the course, students will have ability to

1. Importance of nutrients for basic requirement of life.
2. Importance of nutrition awareness for prevention of diseases and early recovery.
3. Dietary management of under nutrition act different phases of human lifecycle.
4. Understand the impact of digestive system in nutrition.

MJ-1T: Basic Nutrition Part-1 **Credits 03**

Course contents:

1. **Food and Nutrition : Basic concepts**
   - Concept and definition of terms Nutrition, Nutrients, Nutritional status, Malnutrition and Health. Interrelationship in maintaining good health and well-being
   - Food as source of nutrients, function of food, classification of food, Food groups. Food pyramid.
   - Energy in Human Nutrition: Idea of energy and its unit, energy balance, Assessment of energy requirements, Deficiency and Excess, Determination of energy in food, B.M.I , B.M.R & influencing factors, S.D.A.
   - Anthropometric assessment for pre-school and school going children: MUAC, Waist-Hip ratio, Height for age. Weight for age. Growth chart.
   - Minimum Nutritional Requirements and RDA : Formulation of RDA and Dietary Guidelines: Reference Man and Reference Woman
   - Interrelationship between nutrition and health- Visible symptoms of goods health.
   - Basic function of nutrients- Carbohydrate, dietary fibre, protein, fat, vitamins, minerals and water

2. **Digestive System**
   - Anatomical structure of human digestive system, digestive juices and their functions.

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- Digestion and absorption of carbohydrates, protein and lipid (General concepts)

3. **Nutrition awareness and Public Health:**
   - KAP and BAP model of nutritional awareness generation process,
   - Concept of Public health, determinants of public health.
   - Various strategies for nutritional awareness generation on public health at rural sectors; child to child strategy, child to parent strategy, women to women strategy.
4. **Under nutrition management from intrauterine life to adulthood:**
   - PEM in the context of underweight, stunting, wasting,
   - SAM; Nutritional Anaemia with special reference to Iron Deficiency Anaemia; Vitamin A deficiency (Xeropthalmia); Iodine Deficiency Disorders; Zinc deficiency: Prevalence, Causes, Consequences and its control.
   - Other Nutritional Problems: Vitamin B complex deficiencies, vitamin C deficiency, Vitamin D deficiencies.

MJ-1P: Basic Nutrition Part-1(Practical) **Credits 01**

Course contents:

1. Identification of slides
2. Small Intestine, large intestine, stomach. Tongue, liver
3. Growth chart and its interpretations
4. Undernutrition and obesity risk assessment using BMI, weight for age, height for age, waist to hip ratio, MUAC.

Preparation of audio visual aids for nutrition awareness

MJ-2: Basic Nutrition Part-II **Credits 04 (Full Marks: 75)**

COURSE LEARNING OUTCOMES:

After the completion of the course, students will have ability to

1. Learn the importance of nutrient for the health care of mother and child.
2. Understand the way of food safety and quality control for improving public health.
3. Importance of Nutrition education communication and behavior alteration for health promotion, disease prevention and early recovery from diseases.
4. Know the different components of health care system.

MJ-2T: Basic Nutrition Part-II **Credits 03**

Course contents:

1. **Mother Child health care:**
   - Definition of health care, and types.

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- Adolescent pregnancy and its complications.
- Non nutritional factors affecting pregnancy outcome.
- Antenatal care and its schedule and importance
- Child immunization.
- Weaning; definition, process of weaning, hygiene and sanitation of weaning.
- Preparation for lactation, Galactogogue.

2. **Food Safety and Quality Control:**
    - Types of Food Hazards. Food borne Diseases: Cholera, Typhoid, Diarhhoea and botulism(causes, mode of transmission, symptoms, prevention strategies)
    - Personal Hygiene, Food Hygiene and Sanitation and Environmental Sanitation and Safety (Water supply, Waste Disposal) at home level.
    - Food Adulteration: Concept/Definition as given by FSSAI, Common adulterants present in foods (cereals, pulses, milk and milk products, fats and oils, sugar, honey, spices and condiments),
    - Ill effect of adulterants (metanil yellow, argemone, kesari dal) on human health common methods for detecting adulteration at home)
    - FSSAI Act 2006, HACCP.

3. **Nutrition Education, Communication and Behaviour Change:**
    - Behaviour Change: Definition and importance. Nutrition Education: Need, Scope and Importance.
    - IEC: Definition, Importance and various concepts.
    - Various Methods of imparting nutrition education (Individual, Group, and mass approach) Types (Interpersonal communication: Individual and group approach; Mass Media, Traditional Media)
4. **Health Care System:**
    - Health care system: Definition, importance and functions. Types-Primary, secondary, tertiary health care system.
    - Prevention of diseases; primordial, primary, secondary, and tertiary prevention
    - Role of anganwadi workers, ASHA workers, multipurpose health workers, role of sub-centres, ICDS centres.

MJ-2P: Basic Nutrition Part-II (Practical) **Credits 01**

1. Identification of food adulterants
   metanil yellow, argemone, kesari dal
2. Visit an anganwadi centre/ICDS centre. Prepare a report.
3. Topic based group discussion

Prepare a best practice list for lactating mothers

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MINOR (MI)

MI – 1: Fundamental Nutrition Part-I **Credits 04 (Full Marks: 75)**

MI – 1T: Fundamental Nutrition Part-I **Credits 04**

COURSE LEARNING OUTCOMES:

After the completion of the course, students will have ability to

1. Importance of nutrients for basic requirement of life.
2. Importance of nutrition awareness for prevention of diseases and early recovery.
3. Dietary management of under nutrition act different phases of human lifecycle.
4. Understand the impact of digestive system in nutrition.

Course contents:

1. **Food and Nutrition : Basic concepts**

- Concept and definition of terms Nutrition, Nutrients , Nutritional status ,Malnutrition and Health. Interrelationship in maintaining good health and well-being
- Food as source of nutrients, function of food, classification of food, Food groups. Food pyramid.
- Energy in Human Nutrition: Idea of energy and its unit, energy balance, Assessment of energy requirements, Deficiency and Excess, Determination of energy in food, BMI , BMR & influencing factors, S.D.A.
- Minimum Nutritional Requirements and RDA : Formulation of RDA and Dietary Guidelines: Reference Man and Reference Woman

2. **Nutrition awareness and Public Health:**

- Nutritional awareness generation process.
- Concept of Public health, determinants of public health.

3. **Undernutrition management from intrauterine life to adulthood:**

- PEM in the context of underweight, stunting, wasting,
- SAM; Nutritional Anaemia with special reference to Iron Deficiency Anaemia; Vitamin A deficiency (Xeropthalmia); Iodine Deficiency Disorders;

MI-1P: Fundamental Nutrition Part-I (Practical) **Credits 01**

Course Outline:

1. Undernutrition and obesity risk assessment using BMI, weight for age, height for age, waist to hip ratio, MUAC.
2. Preparation of audio visual aids for nutrition awareness
3. Computation of BMI, BMR, SDA from the provided data.
4. Public health sensors assessment.

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MI-2: Fundamental Nutrition Part-2 **Credits 04 (Full Marks: 75)**

MI-2T: Fundamental Nutrition Part-2 **Credits 03**

Course contents:

1. **Nutrition Education, Communication and Behaviour Change:**
   - Behaviour Change: Definition and importance. Nutrition Education: Need, Scope and Importance.
   - IEC: Definition, Importance and various concepts.
   - Various Methods of imparting nutrition education (Individual, Group, and mass approach) Types (Interpersonal communication: Individual and group approach; Mass Media, Traditional Media)

2. **Health Care System:**
   - Health care system: Definition, importance and functions. Types-Primary, secondary, tertiary health care system.
   - Prevention of diseases; primordial, primary, secondary, and tertiary prevention
   - Role of anganwadi workers, ASHA workers, multipurpose health workers, role of subcenters, ICDS centers.

3. Mother Child health care:
   - Definition of health care, and types.
   - Adolescent pregnancy and its complications.
   - Antenatal care and its schedule and importance
   - Child immunization

4. Food Safety and Quality Control:
   - Types of Food Hazards. Food borne Diseases: Cholera, Typhoid, Diarhhoea and botulism (causes, mode of transmission, symptoms, prevention strategies)
   - Personal Hygiene, Food Hygiene and Sanitation and Environmental Sanitation and Safety (Water supply, Waste Disposal) at home level.
   - Food Adulteration: Concept/Definition as given by FSSAI, Common adulterants present in foods (cereals, pulses, milk and milk products, fats and oils, sugar, honey, spices and condiments), Ill effect of adulterants (metanil yellow, argemone, kesari dal) on human health common methods for detecting adulteration at home)

MI-2P: Fundamental Nutrition Part-2 (Practical) **Credits 01**

Course Outline:

1. Prepare a best practice list for lactating mothers.
2. Common food adulteration detection test.
3. Visit an anganwadi centre/ICDS centre. Prepare a report.

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SKILL ENHANCEMENT COURSE (SEC)

SEC 1: Community Nutrition Programme — Credits 03 (Full Marks: 50)

COURSE LEARNING OUTCOMES:

After the completion of the course, students will have ability to

1. To know programme formulation and its different components.
2. To understand the programme planning, designing and implementation.
3. To know the programme management and evaluation.

SEC1P: Community Nutrition Programme (Practical)

Course Outline:

Programme formulation-different components

- Pre-program survey
- Policy decision and plan of action
- Program designing
- Program implementation
- Program Management
- Program evaluation
- Program formulation to be done using secondary data set and primary data set.

SEC 2: Food Adulteration and Community Health — Credits 03 (Full Marks: 50)

COURSE LEARNING OUTCOMES:

After the completion of the course, students will have ability to

1. To understand the detection of food additives and adulteratives in different food items.
2. To understand the impact of food adulteration on different health hazards.

SEC 2P: Food Adulteration and Community Health (Practical)

Course Outline:

1. Food adulterants : Definition, types, concepts of additives, adulteratives and contaminants with example
2. Basic concepts of determination of adulterants- cereal powder, jam, jelly, spices, butter and oil, dairy products, beverages., fast foods, junk foods, processed and preserved food.
3. Adulterants for using odour, colour, taste and palatability of food.
4. Health impacts of food adulterants- carcinogenic, teratogenic, immunotoxic, infertility, hypertensive, CVD, diabetes. Sedcondary data based diagnosis process.

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