

Draft UG Syllabus -
FOOD and NUTRITION
Minor

West Bengal State University
2023

Food and Nutrition

Programme Objective:

The objective of the programme is to facilitate students acquire elementary working knowledge of the concepts of food and nutrition in relation to human health.

Programme Outcome:

On successful completion of the programme, the students are expected to acquire working knowledge, important values, hands on skills, ability to apply in real life situations, as the thrust of the programme seeks to strike a balance between theory and its applicability

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Semester wise Outline Structure: Minor courses

Semester(s)	Course Codes (Credit)	COURSE CODE*	COURSE TITLE
Semester 1	MA-1 (5)	FNTMIN101T	ELEMENTARY FOOD AND NUTRITION
Semester 2	MA-2 (5)	FNTMIN202T	ELEMENTS OF HUMAN HEALTH - 1
Semester 3	MA-3 (5)	FNTMIN303T	ELEMENTARY COMMUNITY NUTRITION
Semester 4	MA-4 (5)	FNTMIN404T	ELEMENTS OF HUMAN HEALTH - 2
Semester 5	MA-5 (5)	FNTMIN505T	ELEMENTARY FOOD SCIENCE
Semester 6	MA-6(5)	FNTMIN606T	ELEMENTARY DIETETICS

*Subject to change

Note: A 5 credit Course will have 3 credit Theory and 2 credit Practical;
45 lecture hours may be allotted for a 3 credit Theory Course

SEMESTER 1

Course Objectives: To provide elementary idea on different aspects of Food and Nutrition, and make it academically interesting to the students

FNTMIN101T: ELEMENTARY FOOD AND NUTRITION (THEORY)

Course Objectives: To provide elementary idea on different aspects of Food and Nutrition, and make it academically interesting to the students

1. Introduction to Food and Nutrition
Definition of Food, Nutrition, Nutrient, Dietetics, Balanced diet, Malnutrition, Energy, BMR, RDA, ACU, food pyramid,
2. Food and Nutrients
Carbohydrate, Protein, Fat, Vitamins and Minerals (calcium, phosphorus, sodium, potassium, iron, iodine,) - sources, classification, chemistry, functions, Functions of water and dietary fibre.
3. Food groups
Basic food groups: Types- cereals, pulses, vegetables including GLVs and roots and tubers, nuts and oil seeds, fruits, dairy, flesh foods, spices.

PRACTICAL

1. Elementary idea of weights and measures.
2. Preparation of dishes from different food groups.
3. Planning and preparation of diet for an adult female and male.

Course Outcome: students are expected to possess elementary working knowledge in Food and Nutrition after completing the particular course

SEMESTER 2

FNTMIN202T: ELEMENTS OF HUMAN HEALTH -1 (THEORY)

Course Objectives: To provide elementary idea on different aspects of Human Health, select systems, as required for students of Food and Nutrition, Minor Course

1. Introduction to Human Health
2. Chemistry and Functions of Nutrients; Deficiency Diseases: Elementary idea on deficiency conditions related to food and nutrition
3. Elementary Cell Biology:
Animal cell: definition, structure and functions of different parts. Organelles
4. Digestive system and Digestion
Digestive system: elementary anatomy, and microanatomy of different parts of digestive system and its associated glands, and their functions.
Composition of different digestive juices and their functions.
Digestion and absorption of carbohydrate, protein and fat.
5. Metabolism: Elementary Idea, BMR- definition, factors affecting; SDA; Enzymes- concept, properties
6. Blood and body Fluids:
Blood, composition, blood corpuscles, functions,
blood groups and its importance intransfusion, hazards of mismatch blood transfusion. Rh factor, blood coagulation. Lymph: Composition and function.
Elementary idea on immune functions; allergy with special reference to food allergens. Immunization: Importance and Immunization schedule.

PRACTICAL

1. Determination of Bleeding Time (BT) and Clotting Time (CT).
2. Detection of Blood group (Slide method).
3. Identification of permanent sections (blood cells, stomach, small intestine, large intestine, liver, pancreas).

Course Outcome: students are expected to possess elementary working knowledge in different aspects of Human Health, select systems, as expected for a student of Food and Nutrition, Minor Course, after completing the particular course

SEMESTER 3

FNTMIN303T: ELEMENTARY COMMUNITY NUTRITION (THEORY)

Course Objectives: To provide elementary idea on different aspects nutrition for the Community

1. Introduction to Community: Concept. Concept of community nutrition, Community health: concept and factors affecting it.
2. Nutritional Assessment: Concept and elementary idea on methods of assessment,
Vital health statistics.
3. Diet Survey: Principle, types,
4. Elementary idea on role of different international and national organization - FAO, WHO, ICMR, ICAR, CSIR,
Role of voluntary health organizations in the improvement of Community health.
5. Programmes for Improvement in Nutrition
6. Nutrition Education: concept and methods

PRACTICAL

1. Anthropometric Measurements – Body Height, Body Weight, circumferences; BMI
2. Clinical assessment and signs of nutrient deficiencies.
3. Diet survey
4. Preparation of homemade ORS.
5. Preparation of low cost nutritious tiffin for school going children.

Course Outcome: students are expected to possess elementary working knowledge in different aspects of nutrition in the community after completing the particular course

SEMESTER 4

FNTMIN404T: ELEMENTS OF HUMAN HEALTH - 2 (THEORY)

Course Objectives: To provide elementary idea on different aspects of Human Health, select systems, as required for students of Food and Nutrition, Minor Course

1. Cardiovascular and Respiratory system: Heart: Junctional tissues and functions. Cardiac cycle, cardiac output, blood pressure and its regulation. Mechanics of breathing
2. Excitable Tissues: types, functions
3. Regulatory Systems: Nervous system and Endocrine system: elementary idea about structure and function. Special Senses: Elementary idea on structure and function
4. Reproductive System- male and female: elementary idea about structure and function
5. Excretory System: kidney- structure and function
6. Special Physiological conditions: Pregnancy and Lactation; Health of mother and children

PRACTICAL

1. Determination of pulse rate in resting condition and after exercise
2. Determination of blood pressure by Sphygmomanometer
3. Identification of permanent sections (Kidney, testis, ovary, muscles, brain).

Course Outcome: students are expected to possess elementary working knowledge in different aspects of Human Health, select systems, as expected for a student of Food and Nutrition, Minor Course, after completing the particular course

SEMESTER 5

ENTMIN505T: ELEMENTARY FOOD SCIENCE (THEORY)

Course Objectives: To provide elementary idea on different aspects of Food Science

1. Food Additives: Concept, types, impact on human health
2. Spoilage of Foods of different groups: Concept, Spoilage in cereals, pulses, vegetables including roots, Tubers and GLVs, Fruits, Dairy, Flesh Foods,
3. Preservation of Food: Concept, principle, objectives, procedures-elementary idea
4. Adulteration of Food: Concept, common types and impacts on human health
Detection of adulterants: principle and procedure
5. Perishability of Food of different types
6. Spices and Herbs: Concept, common types (turmeric, coriander, cumin, pepper, ginger, garlic, mustard, clove) and health benefits
7. Beverages: Concept and common types (tea, coffee, aerated drinks, juices, chocolate and cocoa); processing

PRACTICAL

1. Detection of common adulterant in food
 - i) Khesari flour in besan
 - ii) Vanaspati in Ghee/Butter
 - iii) Dried papaya seeds in black pepper
 - iv) Metanil yellow in turmeric or coloured sweet products.
 - v) Artificially foreign matter in tea (dust/leaves).
2. Preparation of Jam, Jelly, Pickle and Sauce

Course Outcome: students are expected to possess elementary working knowledge in different aspects of food science after completing the particular course

SEMESTER 6

FNTMIN606T: ELEMENTARY DIETETICS (THEORY)

Course Objectives: To provide elementary idea on different aspects of Dietetics

1. Elementary Concept of Dietetics: Diet, Dietitian: Roles, Diet therapy, Importance of Diet in Health and Diseases;
2. RDA: concept and factors affecting RDA; nutritional requirements in different age groups; Balanced Diet
3. Meal Planning: Principles and objectives;
Diet for different age groups: infants (weaning, supplementary food), pre-school children and school children, adult males and females, aged people.
4. Dietary guidelines for Pregnancy and Lactation
5. Therapeutic Diet: concept, principles and classification - regular, soft, fluid, special feeding methods
6. Dietary management of different conditions: Dietary management in Gastro intestinal diseases (diarrhea, constipation, gastritis, peptic ulcer and flatulence), Fever, Diabetes mellitus, hypertension, atherosclerosis, cirrhosis of liver, Gout, Obesity, Underweight.

PRACTICAL

1. Planning and Preparation of fluid diet, soft and solid diet.
2. Planning and preparation of a day's diet for the following conditions:
Peptic ulcer, Fever, Hypertension, Diabetes mellitus, Obesity.

Course Outcome: students are expected to possess elementary working knowledge in different aspects of dietetics after completing the particular course

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Note: Format of questions in end semester examinations

There will be nine question of ten marks each; examinees will be required to attempt five such questions of ten marks for an examination having maximum marks allotted fifty. There may be parts carrying different marks in a question carrying ten marks.