

**Maulana Abul Kalam Azad University of Technology, West Bengal**  
**(Formerly known as West Bengal University of Technology)**  
**Syllabus of B.Sc. (Dietetics and Nutrition)**  
**Effective from academic session 2023–2024**

**Semester-VI**

**FYBDN 601 Diet Therapy II**

**3 credits, Total- 30hours + 15 Tutorial Hours**

**Course Objectives:**

1. To know the nutritional energy calculation, and energy management.
2. To know the different lifestyle diseases, corresponding diet, and dietary management.

<b>Sl. No.</b>	<b>Course Outcome (CO)</b>
1	Demonstrate and apply the knowledge and skills required for Energy modifications and nutritional care for diabetes management.
2	Examine and apply the knowledge and skills required for planning and preparation of diet in kidney diseases.
3	Infer and apply the knowledge and skills required for planning and preparation of diet for food allergy, food intolerance, surgical conditions, and metabolic disorders.
4	Conclude the knowledge and skills required for preparation of diet plan for cancer.

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**Unit I Nutrition in Diabetes Mellitus** 5hrs

Prevalence, Classification, Factors Influencing, Risk Factors – Clinical Characteristics, Metabolic changes in Diabetes

Diagnosis of Diabetes Mellitus (1) Blood Glucose Levels, a) Glycosuria, b) Ketonuria (2) Oral Glucose Tolerance Test (3) Glycosylated Hemoglobin HbA1C Management - Principles of Nutritional Therapy-

I (i) Care of Insulin Dependent Diabetes Mellitus

(ii) Insulin Therapy

iii) Testing Methods for Monitoring Results-

a) SBGM b) HbA1C c) Urine Testing II Care of

Non-Insulin Dependent Diabetes

III Complications of Diabetes-Hypoglycemia, DKA, Fasting Hyperglycemia Long Term Complications-Macro vascular and Micro Vascular Diseases

**Unit II Nutrition in Renal Diseases:** 5hrs

Renal Function in Disease, Etiology, Clinical Symptoms and Course of Disease, Treatment – Dietary Management, Feeding Pattern, Glomerulonephritis, Nephrotic Syndrome - Kidney disease, Kidney Dialysis

**Unit III Nutrition in Surgical Conditions** 5hrs

a) Surgical Conditions – General Considerations, Pre-Operative and Postoperative Diet

b) Major Burns – Medical Management – (i) Fluid & Electrolyte Repletion (ii) Wound Management

c) Trauma – Hormonal Response, Levels of Stress

Infections-UTI and HIV

**Unit IV Food Allergy and Food Intolerance** 5hrs

Definitions, Symptoms, Risk Factors, Food Intolerances, Diagnosis, Food Challenge, Treatment

**Unit V Metabolic Disorders** 5hrs

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Gout-etiology, Symptoms, & nutritional management

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**Unit VI Cancer**

5hrs

Nutritional care in Cancer- Pathophysiology, Causes, Types, Nutritional management

**FYBDN 691 Diet Therapy II-Practical**

**2 credits, Total-20 hours + 20 self-paced practice hours**

1. Planning and preparation of diets for type I diabetes
2. Planning and preparation of diets for type II diabetes
3. Planning and preparation of diet for food intolerance
4. Planning and preparation of diets for kidney disease
5. Planning and preparation of diets for gout
6. Planning and preparation of diets for cancer

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**FYBDN 602 Food Safety and Quality control**  
**3credits, Total-30hours + 15 Tutorial hours**

**Course Objectives:**

1. To acquaint on Food quality control, Food Laws, regulations for the safety of Foods.
2. To gather knowledge on Food additives, adulterants, and their effect on human health.

<b>Sl. No.</b>	<b>Course Outcome (CO)</b>
1	Make use of the concept of food additives and their effect on human health.
2	Experiment with the concept of the common adulterants in food and their effects on health.
3	Experiment with the concept of the spoilage of different food infections and infestation
4	Evaluate the applications of basic techniques required for implementing the food laws, and their regulations.

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**UNIT-I**

**6hrs**

Principles of Quality control of foods –Raw material control, processed food control (meat, fish and milk products) and finished product inspection. Leavening agents- classification, uses and optimum levels. Food additives according to FSSAI guidelines - Preservatives, coloring, flavoring, sequestering agents, emulsifiers, antioxidants.

**UNIT-II**

**6hrs**

Standardization systems for quality control of foods: -National and International standardization system, GMP,GHP. Different types of food grade materials.  
Food adulteration - Common adulterants in foods and tests to detect common adulterants.

**UNIT-III**

**6hrs**

**Standards for foods:** Cereals and pulses, milk and milk products, Coffee, tea, sugar and sugar products.

**UNIT-IV**

**6hrs**

**Methods for determining quality** - Subjective and objective methods. Sensory assessment of food quality (cereals and milk products) -appearance, color, flavor, texture and taste, different methods of sensory analysis, preparation of score card, panel criteria, sensory evaluation room.

**UNIT-V**

**6hrs**

Food safety, Risks and hazards: Food related hazards, Microbial consideration in food safety, HACCP-principles and structured approach.

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**Reference Books:**

1. Food science-Norman Potter
2. Food Technology-Presscott.S.C.and Procter
3. Food chemistry-Meyer
4. Food science,Chemistry and experimental foods-M.Swaminathan
5. Food chemistry-Lee
6. Food science-Srilakshmi(2001)2nd edition, New age international publishers-(2001)
7. Rufus.K.Guthrie-Food sanitation –3rd edition –Van NostrandReinhold New York 1988.
8. Mahindra-S.N.-Food safety –A techno-legal analysis-Tata McGrawhillpublishers2000.
9. Manoranjan Kalia-Food processing and preservation.
10. Roday Food hygiene and sanitation.
11. Indian Food Industry,2000, Vol 19:2

**FYBDN 692 Food Safety and Quality Control : 2 credits,**  
**Total-20hours + 20 self-paced practice hours**

1. Market survey of preserved fruits and vegetable products.
2. Visit a food testing lab or any agency of food standards.
3. Nutrition labeling requirements and developments.
4. Simple tests for food adulteration.
5. Case study on food safety issues – ICDS/MDM, Diarrheal outbreak /any other.

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**FYBDN 603 Sports Nutrition**

**4 Credits, Total:40hours + 20 Tutorial hours**

**Course Objectives:**

- 1 To work with the objectives, importance and principles of sports nutrition.
- 2 To use the steps and methods involved in planning nutritional guidelines for different sports activities.
- 3 To utilize the knowledge about Pre- event meal and diets for athletes.

Sl. No.	Course Outcomes (COs)
1	Appraise the sports nutrition
2	Make use of the concept of the benefits of physical activity and exercise
3	Construct concept regarding the classification of Sports activities
4	Evalute the concept regarding nutritional requirements of sports person
5	Apply basic techniques required for planning of diet during and after events for athletes.

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**Unit I: 8hrs**

Definition of physical activity, exercise, physical fitness, sports physiology and sports nutrition.

**Unit II: 8hrs**

Benefits of physical activity and exercise. walking (recreational) fitness or gym, running, swimming, cycling, walking, football or soccer, yoga.

**Unit III: 8hrs**

Classification of Sports activities.

**Unit IV: 8hrs**

Nutritional requirements of sports person. Carbohydrate, Protein and fat nutrition for sports.

**Unit V: 8hrs**

Pre- event meal. Designing diets for athletes.

**Recommended Readings:**

- a. Campbell B (2017): Sports Nutrition: Enhancing Athletic Performance, CRC Press, Taylor & Francis.
- b. Haff GG (2008): Essentials of Sports Nutrition Study Guide, Humana Press.
- c. Dunford M and Doyle JA(2008):Nutrition for Sport and Exercise, Thomson Wadsworth,
- d. Brouns F (2002): Essentials of Sports Nutrition, 2nd Revised Ed. Wiley-Blackwell.
- e. Bean A (2017): The Complete Guide to Sports Nutrition, 8th Ed. Bloomsbury Sport.
- f. Benardot D (2011): Advanced Sports Nutrition, 2nd Ed. Human Kinetics Publishers.
- g. Srilakshmi B (2014): Dietetics, 7th Multicolour Ed. New Age International (P) Ltd