

**COURSE CODE:** NTD 301  
**COURSE TITLE:** Human Nutrition  
**NUMBER OF UNITS:** 2 Credits  
**COURSE DURATION:** Two hours per week

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### COURSE DETAILS:

**Course Coordinator:** Afolabi, W.A.O.  
**Email:** [afolabiwao@yahoo.com](mailto:afolabiwao@yahoo.com)  
**Office Location:** Dept of Nutrition and Dietetics  
**Other Lecturers:**

### COURSE CONTENT:

Study of nutrients, digestion, absorption and roles in body function. Introduction to nutrient requirements and deficiencies. Primary nutritional diseases including starvation, Famine, Obesity, PEM, rickets and osteomalacia. Scurvy, beriberi, pellagra, endemic goiter and micronutrient deficiencies of public health importance. Assessment of nutritional disorders. Nutrition and infection. Food additives and natural food contaminants, microbial toxins and hazards from pesticides and toxicity of packaging materials.

This course introduces the student to the basics of food and human nutrition including nutrients, food metabolism, nutrient requirements and daily allowances. The course will also include knowledge of primary nutritional diseases, causes, prevention and control of these diseases. Students will be taken through basic methods of assessing nutritional disorders as well as the synergy between nutrition and infection. Food additives, natural food contaminants and toxin will also be taught while students will be exposed to nutrition situation in Nigeria and basics of food and nutrition policy.

### COURSE REQUIREMENTS:

Students are expected to participate in all course activities, attend classes and achieve a minimum of 75% attendance to qualify for writing the final examination. Students are

expected to attend to and submit all assignments promptly and participate in continuous assessments and tests

## READING LIST:

## LECTURE NOTES

### Lecture Content:

#### Week 1

##### **Study of Nutrients, Digestion, Absorption and Products and Roles in Body function.**

- Definition of nutrients.
- Classification of nutrients.
- Other nutrients found in food e.g. fibre, enzymes, emulsifiers, antioxidant, pigments and flavor.
- Role of nutrients.
- Sources of nutrients.
- Processes of digestion, absorption and metabolism of nutrients.
- End products of digestion and their roles in body function.

#### Week 2

##### **Introduction to nutrients requirements and deficiencies.**

- What is a nutrient requirement?
- Concept of Recommended Dietary Allowance (RDA)
- Dietary Reference Values (DRVs).
- Recommended Daily Intake (RDI).
- Reference Nutrient Intake (RNI).

- Dietary reference Intakes (DRI).
- Nutrient Deficiencies

### **Week 3**

#### **Primary Nutritional Diseases**

##### **a. Starvation**

- Definition of starvation.
- Causes of starvation.
- Clinical manifestation and symptoms of starvation.
- Consequences of starvation.
- Management and treatment of starvation.

##### **b. Obesity**

- Definition of obesity.
- Causes of obesity.
- Clinical features of obesity.
- Classification of obesity.
- Management and treatment of obesity.

### **Week 4**

#### **Protein-energy malnutrition**

- Definition of protein-energy malnutrition.
- Causes and epidemiology of protein-energy malnutrition.
- Classification of protein-energy malnutrition e.g. Wellcome classification, Gomez classification
- Clinical features of protein-energy malnutrition.
- Management and treatment of protein-energy malnutrition.

## **Week 5**

### **Rickets and Osteomalacia**

- Definition of rickets and osteomalacia.
- Causes of rickets and osteomalacia.
- Clinical manifestation and symptoms of rickets and osteomalacia.
- Prevention, management and treatment of rickets and osteomalacia.

### **Scurvy, Beriberi and Pellagra**

- Definition of scurvy, beriberi and pellagra.
- Causes of scurvy, beriberi and pellagra.
- Clinical manifestation and symptoms of scurvy, beriberi and pellagra.
- Prevention, management and treatment of scurvy, beriberi and pellagra.

## **Week 6**

### **Assessment of Nutritional Disorders.**

- Anthropometric Assessment
- Biochemical Assessment
- Clinical Assessment/ Physical examination
- Dietary Intake Assessment

### **Population Problems: Famine and Endemic Goiter.**

- Definition of famine.
- Types and causes of famine with examples of previous famines.
- Consequences of famine.
- Prevention and management of famine.
- What is endemic goiter (Iodine Deficiency Disorders)?
- Causes, epidemiology, clinical features, management and treatment of endemic goiter.

**(6) Nutrition and Infection.**

- Relationship between infection and malnutrition.
- Effect/consequences of infection and malnutrition on nutritional status of individuals.

**Week 7**

**Nutrition situation in Nigeria and Government Nutrition policy.**

- Nutrition situation of Nigerian women and children
- Nutrition and development policies.
- Policies and programmes to improve nutrition.
- Improving household food security.
- Protecting consumers through improved food quality and safety.

**Week 8**

**Food additives and Contaminants in Nutrition.**

- What are food additives and food contaminants?
- Types of food additives: intentional and unintentional additives.
- Effect of additives and contaminants on food.
- Functions of food additives.

**Week 9**

**Food toxins and toxicants.**

- Sources of toxic components of food e.g. hydrocyanic acid (in cassava), Aflatoxin (in cereals), Trypsin inhibitors (in legumes), solanine (in potatoes), mycotoxins, glycosides, etc.
- Infective agents in foods e.g. bacteria, viruses and parasites
- Hazard from pesticides, toxicity of packaging materials.

**Week 10**

- Micronutrient of Public Health Importance Vitamin A deficiency, Iron Deficiency Anaemia and Iodine Deficiency Disorders.