

GENNS-101: FUNDAMENTALS OF HUMAN NUTRITION

Natural Science Course

Credits:	03
Pre-Requisite:	Nil
Offering:	Undergraduate Degrees (including Associate Degrees)
Placement:	1 – 4 Semesters
Type:	Nature Science
Fields:	All

DESCRIPTION

Fundamentals of Human Nutrition (FHN) is an introductory-level undergraduate course that focuses on the basic knowledge of nutrition and food in disease prevention and management. This course introduces students to description and functions of nutrients, digestion and absorption, nutrient deficiencies, requirements and food sources. This course will also enable students to understand the types and role of macronutrients and macronutrients in human body.

COURSE LEARNING OUTCOMES

1. To familiarize with the role of macro- and micro-nutrients in human nutrition
2. To understand the absorption, digestion and metabolism of nutrients in the human
3. To abreast knowledge about the health disorders due to consumption of non-optimal quantities of the nutrients.

SYLLABUS

1. **Introduction**
 - Food, nutrients and nutrition
 - Malnutrition - global and local scenario,
 - Diet, balanced diet, food groups,
 - Foundations of healthy diet, meal planning
2. **Water**
 - Functions,
 - Regulation in body, dietary requirements,
 - Electrolytes and acid base balance
3. **Carbohydrates**
 - Types,
 - Role in body,
 - Dietary fiber, bulk and alternative sweeteners,
 - Recommended intake and energy value
4. **Fats and oils**
 - Types and functions
 - Recommendations concerning fat intake
 - Fat substitutes
5. **Proteins**
 - Amino acids,
 - Protein synthesis and degradation,
 - Classification and functions,

- Quality of proteins,
- Dietary requirements
- 6. Vitamins**
 - Classification and types
 - Sources
 - Role in body
- 7. Mineral elements**
 - Types,
 - Requirements,
 - Sources, role in body
- 8. Digestion**
 - Alimentary tract,
 - Digestive juices,
 - Secretions
- 9. Absorption and metabolism of nutrients**
 - Carbohydrates
 - protein lipids
- 10. Nutrient and Dietary Deficiency**
 - Disorders
 - Special nutrient requirements.

PRACTICAL REQUIREMENTS/ TEACHING-LEARNING STRATEGIES:

Teaching will be a combination of class lectures, class discussions, and group work. Short videos/films will be shown on occasion.

SUGGESTED INSTRUCTIONAL / READING MATERIAL

1. Awan, J.A. (2011). Elements of Food and Nutrition. Unitech Communications, Faisalabad, Pakistan.
2. Bamji, M.S., Krishnaswamy, K. & Brahman, G.N.V. (2009). Textbook of Human Nutrition. (3rd ed.). Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, India.
3. Eastwood, M. (2003). Principles of Human Nutrition. (2nd ed.). John Wiley & Sons, Inc., New York, USA.
4. Geissler, C. & Powers, H. (2011). Human Nutrition. (12th ed.). Churchill Livingstone, London, UK.