LECTURE’S OBJECTIVES

By the end of this lecture, student can:

- Define what is the term of nutrition, health and environment.
- Explain the differences of the every terminology.
COURSE EVALUATION

- LAB REPORT + ATTENDANCE: 20%
- FIRST TEST: 25%
- MINI PROJECT: 15%
- PRESENTATION: 5%
- FIELD TRIP + REPORT: 5%
- FINAL EXAM: 30%
- TOTAL: 100%
INTRODUCTION

Food
Is anything that can be used by the body to sustain growth and bodily process and to provide energy. Different food contain different proportion of nutrients and calories:

Basic function of nutrients

- Maintenance of life
- Growth
- Repair of the tissues

The plants and animals we consume.
Chemical substances obtained from food and used in the body to provide energy, structured materials, and regulating agent to support growth, maintenance and repair of the body’s tissues.

It is also can reduce the risks of some diseases.

Six classes of nutrients

- carbohydrates, proteins, lipids, minerals, vitamins, water.
NUTRITION

The science of foods and nutrition and other substances they contain, and of their actions within the body:

- Ingestion
- Digestion
- Absorption
- Transportation
- Metabolism
- Excretion

A broader perspective

- Economic, culture, psychological, consequences of food and eating
CLASSIFICATION OF NUTRIENTS

😊 Chemical Composition of Nutrient
i. Inorganic - not containing carbon
ii. Organic - containing carbon-carbon bonds or carbon-hydrogen bonds

😊 Essential Nutrients
The nutrient that food must supply, needed from outside the body (from food)
i. Macronutrients (Carbohydrate, protein, lipid, water)
ii. Micronutrients (Mineral, vitamin)

😊 Non-nutrients:
components in foods that do not fit with six classes of nutrients (i.e., alcohol, pigments, additives)
ENERGY

😊 “Defined as the ability to work”.

😊 **ATP (Adenosine triphosphate)** is the form of energy that the body uses to move and function

😊 **Unit of Energy**: calories or kilocalories

‘One calorie as the amount of heat needed to raise 1 gram of water 1 degree Celsius’.

😊 One kilocalories (kcalories/kcal) = 1000 calories
REFERENCE NUTRIENT INTAKE (RNI)

😊 The RNI is the amount of a nutrient that is enough to meet the requirements of the majority (97.5%) of the population. Only a minority of the population (2.5%) will need more than this amount.

😊 For practical purposes the RNI should be used when planning a diet or assessing the dietary intake of a group. The nearer the average intake of the group to the RNI, the less likely it is that any individual will have a deficient intake.
FACTORS INFLUENCE FOOD CHOICES

- Flavor and Appearances of food
- Familiarity and culture background
- Emotions and social influences
- Desire to improve physical performance and appearance
- Food availability, cost and conveniences
- Environmental concerns
- Health concerns
WHAT IS HEALTH?

😊 General Definition:
😊 No disease and infirmity
😊 Not holistic
WHO defines health as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

**Physical health**

- involves the condition of your body. This can include exercise, nutrition, sleep, drug use, and hygiene. Physical health can also include you personal safety such as wearing a helmet when biking or wearing a seatbelt in a car.
Mental/emotional health
Mental health deals with your ability to solve problems (conflict management), self-esteem, feelings and stress.

Social health
This includes relationships and speaking/listening skills. There might be times in which you might disagree with your friends or relatives; this is normal in people’s lives. However, you do not have to argue, or show disrespect to other people.
Wellness

A multidimensional, lifelong process that includes physical, emotional, and spiritual health.

An active process we work every day.

Dimensions of wellness

- Physical health
- Spiritual health
- Emotional health
- Social health
- Occupational health
Wellness Dimensions

- **Occupational health**
  - meaningful work or vocation

- **Physical health**
  - includes nutrition and physical activity

- **Social health**
  - includes family, community, and social environment

- **Spiritual health**
  - spiritual values and beliefs

- **Emotional health**
  - includes positive feelings about oneself and life

Figure 1.1 Many factors contribute to an individual’s wellness. Primary among these are a nutritious diet and regular physical activity.
WELLNESS DIMENSIONS

- Spiritual
- Emotional
- Intellectual
- Financial
- Environmental
- Social

your individual wellness
Definition 1.

Environmental health comprises those aspects of human health, including quality of life, that are determined by physical, chemical, biological, social and psychosocial factors in the environment.

It also refers to the theory and practice of assessing, correcting, controlling and preventing those factors in the environment that can potentially affect adversely the health of present and future generations.
Definition 2.
Environmental health services are those services which implement environmental health policies through monitoring and control activities. They also carry out that role by promoting the improvement of environmental parameters and by encouraging the use of environmentally friendly and healthy technologies and behaviours. They also have a leading role in developing and suggesting new policy areas.

Environmental health is the branch of public health that is concerned with all aspects of the natural and built environment that may affect human health. Other terms referring to or concerning environmental health are environmental public health, and public health protection / environmental health protection.
The environment affects people:
- Climate
- Water availability
- Shelter availability
- Soil for plant growth

People affect the environment:
- Burning fossil fuels
- Creating urban areas
- Cutting forests for wood
- Flushing waste into rivers
Components of Environment

**Natural Environment**

- The natural environment refers to both Biotic (plants and animals) and Abiotic conditions existing on the earth. Its consists of Lithosphere, Hydrosphere, Atmosphere and Biosphere.

**Human Environment**

- The human environment refers to the activities, creation and interactions among human beings.
Host, Agent And Environment Relationships

HOST

AGENT  ———  DISEASE  ———  ENVIRONMENT
The interacting triad of causal factors

Agent
(virulence; infectivity; addictive qualities, etc.)

Environment
(public health sanitation; social context; availability of health care, etc)

Host
(genetic susceptibility; resiliency; nutritional status; motivation, etc.)

(Recall the fireman’s mantra: a fire requires air, fuel and heat)
HOST

- Intrinsic factors
  - Cannot be change

- Extrinsic factors
  - Positive behavior
  - Negative behavior
AGENTS

- **Classifications**
  - Biological
  - Chemical
  - Physical

- **Modes of transmission**
  - Vector
  - Direct contact
  - Others

- **Means of entry**
  - Nose or mouth
  - Food or water
  - Skin lesion
THANK YOU