UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Nutrition: From Traditional Foods To Novel Foods

2223-2-F0901D058

Aims

The objectives of the course are:
a) to introduce the fundamental principles of human nutrition and dietetics;
b) illustrate the hormonal principles of energy metabolism control;
c) illustrate the most recent innovations in the food sector (novel food) and new cultivation techniques to increase environmental sustainability;
d) Finally, notes on diet therapy in different clinical conditions and the use of biotechnologies

Contents

Detailed program

The course has, in particular, the purpose of:

1. to acquire fundamental knowledge on the nutritional functions of carbohydrates, proteins, lipids, vitamins, and mineral salts and their population and individual needs;
2. provide the notions for calculating the energy needs of the population according to age, sex, and physical activity;
3. provide the basic notions on the product and nutritional characteristics of food groups;
4. provide the basic notions on the characteristics of particular foods (fermented drinks, coffee), the main nutraceuticals, functional and enriched foods, and the European standards that regulate them (EFSA);
5. make known basic nutrition and the primary methods for assessing body composition, energy expenditure, and nutritional status and the guidelines for proper nutrition;
6. provide the basics of nutritional biochemistry to understand the mechanisms of digestion, absorption, and metabolism of food and nutrients and the regulation of hunger and satiety, and the control of body weight;

7. provide the principal notions of biochemistry on the control of energy and hormonal metabolism (insulin-glucagon) and cellular pathways;
8. provide adequate knowledge on the planning of nutritionally adequate diets, especially in physiological conditions, and on the role of macro and micronutrients on general health, with the use of LARN, of the Guidelines for a Healthy Diet;
9. provide knowledge on nutrition and physical activity;
10. provide adequate knowledge on the circular economy, sustainability, and new cultivation techniques;
11. provide knowledge on Novel Food (insects, algae, jellyfish, etc.) and the food of the future (meat without animals);
12. Diet therapy in various clinical conditions and possible interactions with biotechnologies.
    a.Overweight and obesity will be framed, also as causative factors of other comorbidities, such as hypertension, dyslipidemia, diabetes, and hyperuricemia. The first 4 hours of surgery will focus on these 5 pathologies.
    b. Diet and oncological diseases, in preventive and therapeutic terms, diet and neurological, osteoarticular and rheumatological diseases, food allergies, and other hypersensitivities to specific nutrients.
    c. The Microbiota as an essential modulator for the response to specific nutritional interventions: the last 2 hours will be dedicated to the description of the current know-how on the microbiota and the reasons why it will become the target of many dietary interventions.

Prerequisites

Teaching form

Frontal lessons

Textbook and teaching resource

Giuseppe Arienti La basi molecolari della nutrizione Ed Piccin
Carla Pignatti Biochimikvca della nutrizione Ed Esculapio

Semester

I semester

Assessment method

Using 2-3 recent articles on a topic during the course, we ask you to prepare a presentation of about 15-20 minutes. The student will have to introduce the topic, illustrate recent results and discuss it with his personal reflection.

Office hours

Reception by appointment

Sustainable Development Goals

ZERO HUNGER | GOOD HEALTH AND WELL-BEING