MASTER OF SCIENCE IN HUMAN NUTRITION

The Master's Degree Course in Human Nutrition has a marked multidisciplinary connotation that, in addition to the physiological and biochemical processes of nutrition, the role of nutrition in preventing disease and maintaining good health as well as changes and needs in physiological and pathological conditions, aims to impart to students in-depth knowledge of regulatory aspects, from health protection to food safety, and economic elements in the business and quality context of the agri-food chain.

The course aims to deepen the essential subjects and develop the various application skills to forge a professional figure, particularly in demand in the world of work. In light of the importance of the graduate's role in Nutrition, the Human Nutrition Curriculum is devoted to the training of a professional figure equipped with in-depth knowledge of the influence of nutrition on the state of health and well-being and the prevention of diseases, e.g., metabolic or neurodegenerative, both of individuals and populations at risk for particular physiological conditions, such as pregnancy, lactation, growth, aging, senescence, and sports activity.

Educational Objectives and Methodology

The Master's Degree in Human Nutrition is designed to impart advanced knowledge and skills in the field of nutrition and individual and community health, adopting a multidisciplinary and integrated approach. This approach is practical in equipping its students with the necessary skills to succeed in the workforce and various professions.

The course's specific training objectives are intended to train a specialized professional capable of critically analyzing and solving problems related to human nutrition, the quality and safety of foods, food supplements, and nutraceuticals, their composition, the effects of consumption, techniques, and regulations of production, and their dissemination in the market.

To achieve these objectives, integrated and transversal teachings about the three different areas enumerated below are included in the educational pathway of the Master of Science in Human Nutrition:

1. **Area of Human Nutrition**

   For this area, the planned teachings aim to transfer advanced technical and scientific knowledge to students to:

   - assess situations that limit food intake for optimal nutrition (e.g., food intolerances and inflammatory reactions, etc.);
   - assess the sphere of eating disorders, highlighting their causes on multiple levels (e.g., endocrinological) and understanding their mechanisms of regulation and alteration of metabolism;
   - examine from a preventive perspective the issue of nutrition concerning populations of individuals;
   - assessing the nutritional status and requirements of individuals and different populations, also with various ages and body conditions, as well as the evaluation of the metabolic effects of the most popular low-calorie diets;
   - understand and evaluate the action and interaction of drugs with nutrients, the action of dietary supplements and nutraceuticals, endocrine regulation of metabolism, and the impact of malnutrition-related diseases.

2. **Biomedical Area**

   For this area, the planned teachings aim to transfer advanced technical and scientific knowledge to students to:

   - understand and evaluate the molecular mechanisms underlying metabolism;
   - understand and evaluate the biochemical effects of dietary introduced nutrients on organs and tissues;
   - understand and evaluate the effects of nutrients on physiological and pathological processes affecting the whole organism;
   - understand and evaluate the role of microorganisms, such as yeasts and bacteria, in physiological and pathological processes in the human organism.

3. **Area of Economics, Technology, and Agribusiness Management**

   For this area, the planned teachings aim to impart advanced technical and scientific knowledge to students to:

   - understand and evaluate the composition of food, as well as the most advanced techniques for food processing and preservation, in addition to the chemical transformation events induced by its cooking;
   - understand the role of input processing in preserving the functionality and properties of food;

- understand the essential scope of the right to health and the right to food safety and quality of life of the individual;
- thoroughly understand the regulations, national and European-based, of food production for consumption and know the obligations to be met in the exercise of one's profession;
- acquire knowledge in different fields related to food safety and food security issues.

The Internship and Master's Thesis, an integral part of the training, strictly aim to characterize the outgoing students' experiences. Teaching activities are delivered online through a dedicated platform within STU's technological infrastructure, while internship activities are conducted in person.

Career Opportunities

Graduates of the Master's degree in Human Nutrition possess a versatile skill set that opens doors to various career paths. They can find employment in food and human nutrition and the broader Life Sciences (biology) field.

In particular, they constitute employment outlets for the graduate in Human Nutrition Sciences:

- the practice of the freelance profession of Nutritional Biologist, subject to passing the state examination to be taken in the country where one wishes to practice;
- the exercise of activities within professional and business structures of the sectors of nutrition, nutraceuticals, food production, pharmaceuticals, and in laboratories of control and experimentation of food technologies;
- the exercise of activities in the design, development, and enhancement of food products (functional and traditional), as well as the management of certification systems;
- access to work activities in the public sector, such as designing health, national, and regional programs;
- the performance of activities within the school, corporate, hospital, nosocomial, social welfare, and sports group catering enterprises;
- the performance of training, education, and dissemination activities in the field of food quality and safety, as well as scientific information;
- Continue studies in paths such as Doctoral Programs or Graduate Schools.

Curricular Program (54 CH)

All students must complete 54 Credit Hours for the MS in Human Nutrition, including Credit Hours for the Master's Thesis.

A. Core Curriculum (51 CH)

- ECO 510 - Consumer economics and law: legal and economic rules in nutrition
- NUT 510 - Nutrition at the metabolic level: biochemical structures, reactions, and regulation (5 CH)
- NUT 520 - Food-level nutrition: production technologies and quality management (5 CH)
- NUT 530 - Organism-level nutrition: tissues, organs, and functions (5 CH)
- NUT 540 - Food intolerances, immunity, and drugs
- NUT 560 - Nutrition and microorganisms: infections and fermentations (4 CH)
- NUT 580 - Principles of Nutraceuticals
- NUT 600 - Methods of nutritional analysis (4 CH)
- NUT 610 - Eating Behavior Disorders and Hormonal Control
- NUT 620 - Epidemiology and genetics of nutrition (4 CH)
- NUT 625 - Metabolic syndrome and gut diseases
- NUT 630 - Nutrition and health status: traditional and innovative nutritional models
- NUT 635 - Lifestyles and nutrition at different ages of life
- NUT 640 - Lifestyles and nutrition for the prevention of chronic diseases

B. Research and Master's Thesis (3 CH)

- NUT 690 - Master's Thesis