MSc in Gastronomy, Nutrition and Dietetics

FACULTY OF FOOD SCIENCE AND TECHNOLOGY

**CURRICULUM**

1ST YEAR, 60 ECTS, fall semester

*Food nutrients and ingredients*: The specific objectives of the discipline refers to the description of nutritious food ingredients with sensory impairments or metabolic regulatory role, highlighting the nutritional and energetic value, to understand how the processing and storage of food affects the quality of ingredients and their functionality (5ECTS-28 hrs lecture/14 hrs experiential learning)

*Gastronomy*: Identification and documentation of the basic principles for setting technological kitchens of the catering units (public culinary/alimentary units); Characterization of the technology flow of the groups of dishes; Justification of the qualitative transformation and deficiencies indicating possible corrections Preparing of the recipes and calculation of the technological losses (5ECTS-28 hrs lecture/14 hrs experiential learning)

*Catering*: Basic principles and optimal technologies of catering. Characteristics that influence quality, safety and productivity of catering systems. Development and management of a catering unit (5ECTS-28 hrs lecture/14 hrs experiential learning)

*Traditional Foods*: Methods to enhance nutritive value of traditional foods Assessment and interpretation of a traditional receipt. Characteristics that influence traditional technological processes. Certification system of the traditional foods (5ECTS-28 hrs lecture/14 hrs experiential learning)

*Physiology*: Specific objectives are: describe the phenomena and physiological mechanisms of chemical and mechanical processing of food in the digestive tract; explain the mechanisms of regulation of food and fluid intake; explanation of factors that affect the sense of taste and smell; description of the sources and functions of essential elements of the food and the effects of deficiency or excess of essential components of the diet on the human body (5ECTS-14 hrs lecture/14 hrs experiential learning)
1st YEAR, 60 ECTS, spring semester

Personalized Nutrition and dietetics (set-up personal a diet): Food behavior (food preference by family or target population groups and the influence of food systems on this behavior); Understanding the distribution and causes of nutritional disparities in populations using of the epidemiology, medical and social sciences tools; interpretation of the study results and enunciation of the personalized nutritional recommendations for a healthy diet; alimentary, nutritional and dietetic risk factors that affect the health and wellbeing; personalized nutritional intervention (case study); establish and implement personalized diets/specific diets (case study) and personalized gastronomy/catering plan (target/specific needs – chronic disease, food allergy, food intolerance, obesity, elderly, children, healthy adults with specific jobs etc. (monitoring, optimization, evaluation) (5ECTS-28 hrs lecture/ 28 hrs experiential learning)

Molecular Gastronomy: Structural and molecular reformulation of food Molecular mixology (MM) (food design based on MM); Molecular Gastronomy (MG) principles (innovative products based on MG) (5ECTS-14 hrs lecture/ 14 hrs experiential learning)

Applied Research: The overall aim of the course is to acquire critical insight and skills in various methodologies that are commonly applied in experimental gastronomy, nutritional and dietetics research. To achieve this aim, knowledge on common methodological issues in gastronomy, nutritional and dietetics research is developed and extended. Topics that will be covered are: aspects of gastronomy, nutritional and dietetics research; experimental designs in gastronomy, nutritional and dietetics research; commonly used methods on the measurement of food consumption, biochemical parameters, nutrigenetics, energy expenditure, physical activity, and body composition, gastronomy receipt design, catering management, functional food design, innovative food design, special target food design, population food behavior research – research project that are recommended to be undertaken into an EU Universities under supervision of a Romanian or international coordinator (finalized by a research publication – BDI/ ISI publication) (5 ECTS 1 semester abroad)

OPTIONAL COURSES:

Nutrigenomics: Aspects of molecular nutrition in combination with applications of genomics technologies, focusing on the relevant examples of complex diseases relating to nutrition such as obesity, diabetes or metabolic syndrome; evaluation and assessment of complex scientific problems in nutritional research into smaller feasible subprojects that can be studied efficiently with molecular nutrition and genomics tools; additional, the impact of sensitizing genotypes for the understanding of complex diseases, the crosstalk between proteins and proinflammatory signaling, the design of dietary intervention studies for Nutrigenomics applications, the concept of challenge tests and early biomarkers, the impact of bioinformatics and data mining and the expectations of the food industry (functional foods, personalized nutrition) will be addressed (5ECTS-14 hrs lecture/ 14 hrs experiential learning)

Biologically Active Compounds: Knowing the different classes of biologically active compounds and key representatives; Absorption and metabolism of plant secondary metabolites (5ECTS-14 hrs lecture/ 14 hrs experiential learning)

Food raw materials and ingredients: Raw material and food ingredients characterization (importance in the context of food and culinary products design to enhance health and prevent diseases) (5ECTS-14 hrs lecture/ 14 hrs experiential learning)

Confectionaries Technology: Quality parameters of raw materials and ingredients used in confectionaries; Knowledge on operation and performance principles of the specific equipment used into a public sweet grocery shop; Understanding and application of methodology and analysis, and technological calculation applied to sweet grocery products; Raw material, by-products and end products test results - analysis and interpretation (5ECTS-14 hrs lecture/ 14 hrs experiential learning)
MSc in Gastronomy, Nutrition and Dietetics

1st YEAR, 60 ECTS, Optional courses

**Food structures and molecular interactions**: Factors that influence food structural characteristics; Methods – determination of structural characteristics; Interaction mechanisms at molecular level and their influence in gastronomy (culinary products) (5ECTS - 14 hrs lecture/14 hrs experiential learning)

**Risk factors, advanced control methods and food safety**: Food contaminants classes and food residues – food safety related to food contaminants; Food contaminant legislation (EU, national Legislation); Food chemical contaminants analysis; Food biological contaminants analysis; Sampling procedure for food contaminants analysis (5ECTS - 14 hrs lecture/14 hrs experiential learning)

**Applied biostatistics**: Data collecting and organization, statistical analysis, results interpretation and practical application of the results (5ECTS - 14 hrs lecture/14 hrs experiential learning)

**Nutrition databases**: Develop nutritional databases and IT applications; Using IT resources; Using IT technologies to assess nutritional status; Using nutritional/gastronomy (culinary) databases to evaluate nutritional status, metabolic status, to processing a target diet plan, a personalized nutritional plan, special food design, functional food design, experimental design, etc) (5ECTS - 14 hrs lecture/14 hrs experiential learning)
2nd YEAR, 60 ECTS, fall semester

**Nutraceuticals and food supplements:** Identification of nutraceutical sources and their functions; Differences between food supplements and drugs; Using preventive methods of misconducting administration of food supplements and nutraceuticals; Specific diets applied to chronical diseases. (4 ECTS-14 hrs lecture/ 14 hrs experiential learning)

**Sensorial analysis**
Classical sensory methodology and physiology of the senses are important topics in this course, which will be studied in-depth. Furthermore, basic experimental psychology, behavioral observation and different factors that influence sensation & perception (context, memory, learning) will be discussed, as well as novel neuroimaging techniques that can provide us with information on how the brain handles and integrates this type of information. During the course, the students read literature in the field of sensory science, and will critically reflect on this. Furthermore, the students will perform a classical sensory test within a specific food category. They will analyze and present the data with simple statistics (such as ANOVA, regression) and descriptive plots, and write a scientific report about the results with their own practical group. The students will have an excursion to the Restaurant of the Future to show them more extensive possibilities of sensory research facilities (e.g. behavioral observation). (4 ECTS-28 hrs lecture/ 28 hrs experiential learning)
MSc in Gastronomy, Nutrition and Dietetics

2nd YEAR, 60 ECTS, fall semester

**Dietetic Food Design:** Marketing assessment and new product advertise and marketing; Dietetic food design – planning and pilot dietetic foods achievement (4 ECTS - 14 hrs experiential learning)

**QM applied in gastronomy:** QS and QA Development of a System Procedure; QM terms and stages to set-up; Audit applied in gastronomy; Gastronomy (culinary product) certification; QS fast-food restaurants, slow-food restaurants, bistro, catering units, bistro-, pub-, mall restaurants, hospitals, kindergardner, schools, events and conferences. (4 ECTS-28 hrs lecture/ 28 hrs experiential learning)

**MSc Thesis:** Assumed knowledge on: To be individually discussed. (40 hrs laboratory practice - 4th semester)

**OPTIONAL COURSES:**

**Food allergy and food intolerance:** Potentially allergenic foods and food additives; Food allergy and food intolerance diagnosis; Using methods to prevent mis-conduct administration of allergenic foods; Treatment principles of food allergies and food intolerances (5 ECTS - 14 hrs experiential learning)

**QM applied in gastronomy:** QM terms and stages to set-up; Audit applied in gastronomy; Gastronomy (culinary product) certification; QS fast-food restaurants, slow-food restaurants, bistro, catering units, bistro-, pub-, mall restaurants, hospitals, kindergardner, schools, events and conferences. (4 ECTS-28 hrs lecture/ 28 hrs experiential learning)

**Metabolism and Nutrition diseases:** Definition of the Nutrition and metabolism diseases and set-up intervention strategy and plan/programme; Relationship FOOD\(\rightarrow\)BROMATOLOGY\(\rightarrow\)NOURISHMENT\(\rightarrow\)PATHOLOGY; Nutritional risk factors involved in onset, maintenance and worsening of the disease or conditions; Nutritional evaluation, interpretation and identification of pathologic risk factors as nutritive point of view; Nutritional intervention recommendations; Principal researches in the field of pathology of nutrition (5 ECTS-14 hrs courses +14 hrs experiential learning)

**Food Flavor:** Understanding molding reaction of flavor compounds in natural and processing food products; Understanding the effect of food components, processing and storage conditions have on food flavor quality; Understanding analytical equipment principle, methodology and application involved in food flavor analysis; Development of basic research project in the field of food flavor chemistry (5 ECTS-14 hrs courses +14 hrs experiential learning)

**Functional Food Design:** Marketing assessment and new product advertise and marketing; Functional food design – planning and pilot functional foods achievement (5 ECTS - 14 hrs experiential learning)

**Culinary Entrepreneurship:** Acquire knowledge and skills of the entrepreneur in the field of gastronomy and culinary arts for improving the quality of life by developing active cooperation between USAMV CN and partners from outside academia: enterprises, professional organisations, chambers of commerce, social partners, local/regional bodies etc. (2 ECTS-14 hrs experiential learning)
Why study abroad in Cluj?

The most dynamic city of Transylvania in a traditional Transylvania town: 2015 EU Youth Capital; TIFF – Transylvania International Film Festival; Botanical Garden; Theaters, Philharmonique, Opera;

Top quality university; Agriculture and Life Sciences: no. 5 in QS Romania University Ranking; Central East located in Europe; Compact city with all assets of a Metropolis in a small and cosy town; History, arts & culture; Hospitality, safe & good living; In the centre of a beautiful region; Largest student town in Transylvania; (Almost) everybody speaks English/French; Plenty of Transylvania cuisine and beer; Extensive student services & sport facilities.

Study Period

Fall / Spring Academic Year: 2015-2016
Lecture period:
Fall semester: October – January;
Holidays: December (Christamas and New Year)
Examinaton period: January-February
Spring semester: February – May
Holidays: Eastern break (1 week)
Examinaton period: June

Interested?

Feel free to contact
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Fees: 350 Euro per semester
Erasmus students (from an Erasmus partner university): tuition waived

www..ingineriealimentara.usamvcluj.ro/index.php/relatii-internasionale/erasmus
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