



Universitat de Lleida

DEGREE CURRICULUM

BIostatistics

Coordination: COLOMER CUGAT, MA. ANGELES

Academic year 2023-24

Subject's general information

Subject name	BIostatistics			
Code	102212			
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Character	Modality
	Bachelor's Degree in Food Science and Technology	1	COMMON/CORE	Attendance-based
Course number of credits (ECTS)	6			
Type of activity, credits, and groups	Activity type	PRALAB	PRAULA	TEORIA
	Number of credits	1.8	2.2	2
	Number of groups	2	1	1
Coordination	COLOMER CUGAT, MA. ANGELES			
Department	MATHEMATICS			
Important information on data processing	Consult this link for more information.			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
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Competences

General competencies:

- That students have demonstrated possession and understanding of knowledge from the base of general secondary education at a level that, although based on advanced textbooks, also includes aspects that involve knowledge from the forefront of this area. .
- That students know how to apply the knowledge to their work or vocation in a professional way and demonstrate it by elaborating and defending arguments, as well as in solving problems within their area of study.
- That students have the ability to gather and interpret relevant data in order to make judgments that include reflection on relevant social, scientific, or ethical issues.
- That students can convey information, ideas, problems and solutions to both specialized and non-specialized audiences.
- That students have developed the necessary learning skills in order to undertake further studies with a high degree of autonomy. In addition, the graduate must:
- Analyze specific situations, define problems, make decisions and implement action plans in search of solutions. • Interpret studies, reports, data and analyze them numerically.
- Select and manage the available sources of information, written and computerized, related to the professional activity.
- Use existing computer and communication tools to support the development of their professional activity (strategic competence of the UdL).
- Work alone and in a multidisciplinary team.
- Understand and express themselves with the appropriate terminology.
- Present information correctly orally and in writing (strategic competence of the UdL).
- Discuss and argue in different forums. • Communicate and master a foreign language (strategic competence of the UdL).
- Recycle in the new technological advances through continuous learning.
- Value comprehensive training, personal motivation and mobility.
- Analyze and assess the social and ethical implications of professional activity.
- Have a critical and innovative spirit. • Analyze and assess the environmental implications in their professional activity.

- Respect the fundamental rights of equality between men and women, the promotion of human rights and the values of a culture of peace and democratic values.

Specific skills:

BASIC SCIENCES

- To know and be able to explain the physical and mathematical foundations necessary for the development of other disciplines and the activities of the profession.
- Know and be able to apply the chemical foundations necessary for the development of other disciplines and the activities of the profession.
- To know and be able to apply the foundations of human biology and physiology necessary for the development of other disciplines and the activities of the profession.
- Know and be able to use the basic concepts of the statistical method, being able to statistically analyze the results of studies and interpret them critically.
- Know the basic processes of a laboratory and know how to use equipment, handle reagents, meet safety conditions and prepare reports.
- Know how to pose and solve problems correctly applying the concepts acquired to specific situations.

NUTRITION AND HEALTH

- To know the basic nutrients, their metabolism and their function in the human body.
- To know the basic concepts related to energy expenditure, energy calculations and recommended energy requirements at different stages of life.
- Know and understand the systems of digestion, adsorption, transport and excretion of nutrients.
- Contextualize the basic concepts of human nutrition with other related sciences and disciplines, in particular with food manufacturing processes.
- Know the nutritional needs throughout the different stages of life.
- To know the mechanisms of nutritional intervention
- the most recommended dietary modifications for different pathologies.
- Know the methodology for the development of functional foods.

FOOD SCIENCE

- To know the chemical composition of food and its chemical reactions.
- Relate the composition of food with its physical, chemical and technological properties.
- Interpret the physical, chemical and biochemical transformations that occur throughout the manufacturing and storage processes.
- Know and be able to use the methods and instrumentation for the physicochemical and sensory analysis of food.

FOOD TECHNOLOGY

- To know the technological aspects of animal production that determine the quality of raw materials for their subsequent transformation.
- Evaluate the characteristics of the main plant varieties and their suitability for the different transformation processes.

- Know the basics and know how to apply basic operations to food manufacturing processes.
- Know the food processing equipment and know how to use it.
- Outline, based on a flow chart, the processes of food preparation and preservation.
- Identify and evaluate raw materials, ingredients, additives, and technological adjuvants for use in the agri-food industry.
- To know the function of ingredients and food additives.
- Apply basic knowledge about raw materials, ingredients and additives to food formulation.
- Interpret the physical and chemical changes that occur during the different food processing processes.
- Modify the processes of making a food based on some objectives.
- Select equipment and organize food processing and packaging lines.
- Develop new processes and products.
- Identify and evaluate the various parts of a project in an agri-food industry.
- Dimension production lines.
- Estimate equipment capabilities for production lines and auxiliary system needs.

FOOD SAFETY

- To know the microbiology and parasitology of food and the microbial implications in food hygiene and safety.
- Analyze and evaluate food risks and manage food safety.
- Carry out training tasks for staff and food handlers.
- Identify the necessary hygienic measures to ensure the safety of food.
- Evaluate the hygienic design of premises, surfaces, equipment and work tools.
- Prevent health problems related to unhygienic food handling.
- Use microbiological food analysis techniques.
- Perform chemical, physical, microbiological and sensory analyzes of food evaluation.

MANAGEMENT AND QUALITY IN THE FOOD INDUSTRY

- Define quality management systems in the food industry.
- Design and implement a quality management program in an agri-food industry.
- Develop a production plan and direct agri-food processes.
- Establish ways to manage the control of product quality in the different phases of the production process.
- Organize the management of by-products and waste from the food industry.
- Identify and solve the environmental problems generated by the agri-food industries.
- Search for and interpret legislative provisions and sources of information that affect the food industry.
- Design a business plan and business organization scheme. ◦ Evaluate an investment financially.
- Analyze the agri-food production sector, analyze food consumption and estimate the global demand for a food.

- To know the marketing and regulation systems of the markets.
- Design and implement agri-food marketing policies and strategies.
- Carry out market studies on agri-food products and product innovation.
- Evaluate the ethical and sociocultural aspect of new forms of food, of new products, knowing how to adapt to new demands.