



Food Engineering



information

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Food Engineering



technological, social and economical change of this century, harmonizing issues of competitive business with social and environmental sustainability. Also, the professional will value the economy of knowledge of his/her activity without neglecting issues of ethical and social responsibility. This professional must be adapted to be gregarious and to participate positively and proactively in sociological and entrepreneurial competitive environments. Moreover, acknowledge that the permanent change in the professional environment requires a lifelong update and perfection of the teams where inserted to ensure a constant cutting-edge advantage. Through a thorough and consistent basic training, the graduate in Food Engineering is a professional capable to solve important issues in his/her area of expertise though defining clearly the limitations of the professional practice by identifying and resorting to the cooperation of other professionals with adequate training when facing abnormal or atypical situations of high complexity.

The overall profile that ESAC guarantees to its prospective 3-year bachelor in Food Engineering can be thus summed up:

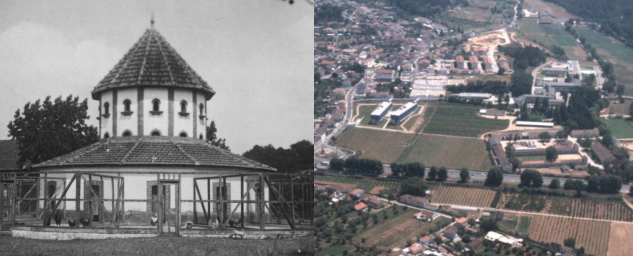
The bachelor is a highly qualified professional, trained in basic and multidisciplinary competencies, of a higher level, having the effective capacity of immediate application of knowledge to conceive, find, and implement solutions in professional environments in his/her area of expertise. The learner of Food Engineering has a training based in direct application supported by theoretical valuing and fundamentation. The intervention in professional environment is always underpinned by values, principles and fundamentals of engineering, as a result of the training carried out in three industries, at pilot scale - hortofruticulture industry, dairy industry, and wine industry.

The learner will be trained to accept challenges, constantly and thoroughly manage his/her professional update, keep up with the development and

Structure and Objectives

FOOD ENGINEERING

BSc in



Coimbra, and offers modern facilities, quality equipment, laboratories, as well as vast agricultural land, forests, vineyards and historic buildings, including over one-hundred year old riding school. *ESAC* has achieved excellence in the areas of Agricultural Sciences, Food Science, Forestry, Environmental Studies, Biotechnology and Ecotourism.

A brief history of Escola Superior Agrária de Coimbra

Agricultural studies were created in Portugal during the early 19th century. In 1887, one of the elementary agricultural schools, the Central School of Practical Agriculture, was established in Coimbra in farms once owned by the Church.

Proud of its past, the now called *Escola Superior Agrária de Coimbra (ESAC)* is adapted to new technologies and world changes. The school is located on a campus of 64 ha, in the southern area of

Escola Superior Agrária offers seven Study Programmes:

- **BSc in Agricultural Engineering**
- **BSc in Biotechnology**
- **BSc in Ecotourism**
- **BSc in Environmental Engineering**
- **BSc in Food Engineering**
- **BSc in Forest Resources Engineering**
- **BSc in Organic Agriculture**

Bsc. in Food Engineering

1 st and 2 nd Semesters	ECTS	3 rd Semester	ECTS	5 th Semester	ECTS
Biology	12	Statistics	5	Water, Waste and Wastewater Management in the Food Industry	5
Physics	12	Food Microbiology	4	Enterprise Management and Entrepreneurship	6
Mathematics and Computer Science	12	Unit Operations I	6	Facilities, Equipment and Instrumentation	7
English Language and Communication Skills	6	General Food Processing	6	Food Technology Workshops	7
Chemistry and Biochemistry	12	Livestock and Agriculture Production	4	Industrial Planning	5
Introduction to Food Engineering	6	Food Chemistry I	5		
		4 th Semester		6 th Semester	
		Food Analysis	4	Packaging and Design in the Food Industry	4
		Sensory Analysis	5	Logistics and Distribution	4
		Quality Control	3	Nutrition and Dietetics	3
		Agro-Food Economics	3	Food Safety	4
		Unit Operations II	6	Project II	3
		Food Chemistry II	4	Training Placement	12
		Project I	5		

PROSPECTIVE CAREERS

Food Industries

- Food Technologist
- Products and processing quality management technologist
- New products development technologist
- Industrial management and planning technologist
- Technical and commercial management

Services

- Food inspection
- Technological support to productive activities
- Cooperation in research, development and technology transfer

Entry requirements

- Complete secondary education (12th year or equivalent)
- 12th year examinations: Mathematics or Biology or Chemistry
- No pre-requirements needed

DEGREE

BSc in Food Engineering

- Duration: 3 years (1st cycle) / 180 ECTS