

**STEPS**

# MSc in Sustainable Food Production Systems

WP1.2. Survey of STEPS relevant programmes,

WP1.3. Best Practices,

WP2.4 Design of STEPS courses (proposal AUT)

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## WP1.2 Survey of STEPS relevant programmes in Albania

The following second cycle programs of MSc/MP were analyzed:

1. MSc.Agrifood Engineering, Profile: Food Technology (AUT-FBF) – 120 Cr
2. MSC. Agrifood Engineering, Profile: Enology, Technology of Beverages (AUT – FBF) – 120 Cr
3. PM.Quality and Safety of Food Products (AUT – FBF) – 90 cr
4. PM. Food Analyzes (AUT – FBF) – 90 cr
5. MSc.Food Science and Technology (UT-FNS) -120 Cr
6. MP. Food Quality and Safety (UFNK) – 60 Cr

FIRST YEAR, SEMESTER I		
Nr.	Course Name	ECTS
1.	Physical Chemistry of Food	6
2.	Biotechnology of Fermentations	6
3.	Chemistry of Natural Products	6
4.	Dairy Science, Special Cheeses Production	6
5.	Food Toxicology	6

FIRST YEAR, SEMESTER II		
Nr.	Course Name	ECTS
1.	Food Quality Management and Safety	6
2.	Food Process Engineering	6
3.	Storage and Preservation of Food Products	6
4.	Dough Rheology and production of Food Yeasts	6
5.	Food Biochemistry and Nutrition	6

SECOND YEAR, SEMESTER III		
Nr.	Course Name	ECTS
1.	Food Analyzes	12
2.	Methodology of Scientific Research	6
3.	Design of New Products in Food Industry	6
4.	Contemporaneous packaging techniques	6

## Msc in “Agrifood Engineering, Profile: Food Technology” (AUT-FBF)

SECOND YEAR, SEMESTER IV		
Nr	Course Name	ECTS
1.	Master Thesis	30
Total ETCS		120

FIRST YEAR, SEMESTER I		
Nr	Course Name	ECTS
1.	Optimization and Process Evaluation in Food Industry	6
2.	Chemistry of Natural Products	6
3.	Chemistry and Biochemistry of Wines	6
4.	Food Biochemistry and Nutrition	6
5.	Biotechnology of Fermentations	6

FIRST YEAR, SEMESTER II		
Nr	Course Name	ECTS
1.	Storage and Preservation of Food Products	6
2.	Industry of Distillation	6
3.	Food Process Engineering	6
4.	Food Quality Management and Safety	6
5.	Advanced Technologies of Food Processing	6

SECOND YEAR, SEMESTER III		
Nr	Course Name	ECTS
1.	Beverages Analysis	6
2.	Methodology of Scientific Research	6
3.	Alternative Viticulture	6
4.	Design of New Products in Food Industry	6
5.	Beverages Technology Wastes	6

## MSC. Agrifood Engineering, Profile: Enology, Technology of Beverages (AUT – FBF)

SECOND YEAR, SEMESTER IV		
Nr	Course Name	ECTS
1.	Master Thesis	30
Total Credits		120



FIRST YEAR, SEMESTER I		
Nr	Course Name	ECTS
1.	Analysis on Chemical, physical and biological risks in food	5
2.	Entrepreneurship and Career Administration	5
3.	Food Control in the production and commerce chain, Food Legislation	5
4.	Decay microorganisms in food	5
5.	Advanced Technologies of Food Processing	5

## PM.Quality and Safety of Food Products (AUT – FBF)

FIRST YEAR, SEMESTER II		
Nr	Course Name	ECTS
1.	Food Quality and Safety Systems	5
2.	Food Analysis and Alimentary Codex	5
3.	Food Toxiology	5
4.	Tracing Systems in Animal Based Production Food	5
5.	Professional Practise	5
6.	Final Graduation Exam/ Microthesis	10
	Total ECTS	60

FIRST YEAR, SEMESTER I		
Nr	Course Name	ECTS
1.	Additives and Contaminants in Foods	6
2.	Microbiological Analysis of Foods	6
3.	Entrepreneurship and Career Administration	3
4.	Active and functional components in Foods	3
5.	Instrumental and Sensorial Analysis of Foods	6
6.	Control and Assurance of Quality in the food analysis laboratories	6

PM in Food Analyzes (AUT – FBF)

FIRST YEAR, SEMESTER II		
Nr	Course Name	ECTS
1.	Physical and Chemical Analyzes of Food	6
2.	Food Legislation	3
3.	Food Tracing through methods of molecular biology	6
4.	Professional Practice	6
5.	Final Graduation Exam/Microthesis	9
	Total ECTS	60



## SEMINAR & LECTURE, 11-13 SEP, UHZ, PEJA

WP1.2. Survey of STEPS relevant programmes, WP1.3 Best Practices, WP2.4 Program Proposal (AUT)

FIRST YEAR, SEMESTER I		
Nr	Course Name	ECTS
1.	Advanced Concepts on Food Chemistry and Technology	9
2.	Enzimology	5
3.	Biotechnology of fermentation processes	5
4.	Applied Statistics in Food Technology	6
FIRST YEAR, SEMESTER II		
Nr	Course Name	ECTS
1.	Biochemical Processes Engineering	9
2.	Food Industry wastes	6
3.	Plant Based Food Industry Processing	5
4.	Animal Based Food Industry Processing	5
5.	Election Course I	5
SECOND YEAR, SEMESTER III		
Nr	Course Name	ECTS
1.	Molecular Technologies Applied in Food Industry	6
2.	Food Legislation	5
3.	Modelling and Simulation of Processes	6
4.	Preservation Technologies in Food Industry	5
5.	Election Course II	4
6.	Election Course III	4
SECOND YEAR, SEMESTER IV		
Nr	Course Name	ECTS
1.	Master Thesis	30
Total ECTS		120

ELECTION COURSES		
Nr	Course Name	ECTS
1.	Certification and HACCP Implementation in Food Industry	5
2.	Packaging in Food Industry	5
3.	GMO – Production and Legislation	4
4.	Accreditation in Food Industry	4
5.	Advanced Concepts on Sensorial Analysis	4
6.	Biosensors	4

## MSc in Food Science and Technology (UT-FNS)

FIRST YEAR, SEMESTER I		
Nr	Course Name	ECTS
1.	Analysis on Chemical, physical and biological risks in food	5
2.	Entrepreneurship and Career Administration	4
3.	State Control and Monitoring of Food Quality	5
4.	Quality and Safety Systems of Food	4
5.	Advanced Technologies of Food Processing	5
6.	Environment, Health and Food Systems	4
7.	Safety Food Legislation	4

**MP. Food Quality and Safety (UFNK)**

FIRST YEAR, SEMESTER II		
Nr	Course Name	ECTS
1.	Quality Evaluation of Animal based food products	4
2.	Food Toxicology	4
3.	Certification of Food Products and Certification Systems	3
4.	Honey Processing Technology	3
5.	Professional Practice	3
6.	Master Thesis	12
	<b>Total ECTS</b>	<b>60</b>



## WP1.2 Survey of STEPS relevant programmes in Albania

- Findings

Considering the title and content of courses we can see that:

- There is no emphasis on Agri-food chain concepts (Sustainability in Agriculture, Food Production /Technology and Food Consumption)
- Existing minimal of courses reflecting sustainability, such as environmental, economic, social and institutional issues.
- No special and deep knowledge on Food systems/Policies for sustainable production and consumption
- The programmes do not reflect national practices, national and international conventions and rules regarding the sustainability of food production systems.

## WP2: Programme Proposal for MSc in “Sustainable Food Production Systems”

### ***Vision:***

- *to provide high-quality education and training to individuals preparing for careers in food system production, food science and technology in the food industry, academia, or government;*
- *to conduct basic and applied research in food system production for the benefit of the end users i.e. food industry and consumers*
- *to provide assistance to the food sector within country through extension programs of the FBF /AUT and EUT.*

## WP2.4: Design of STEPS courses Proposal

### The programme's goal:

is to qualify students to manage complex processes associated with food systems, including the approach of production and sustainability at every step of the food value chain.

## Proposed courses in the program by FBF/EUT

Disciplines addressing aspects of sustainability should be as follows:

- Economic and management courses – up to 15%
- Food Technology/Food Safety/Engineering courses – up to 35%
- Environmental Courses – up to 10%
- Social and Institution courses – up to 15%
- Master Thesis – up to 25%

## Design of Courses:

- Core Courses – 30 Cr
- Elective Courses – 60 Cr
- Master Thesis – 30 Cr

## Core Courses – 30 Cr

1. Fundamentals of food production systems - 6 Cr
2. Law and policies on food production systems – 6 Cr
3. Food Ethics – 6 Cr
4. Research methodologies and tools – 6 Cr
5. Agricultural and food industry waste management – 6 Cr



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Program Proposal (AUT)

## **Elective Courses :**

Group I: Food Engineering, Quality & Safety

Group II: Management of Food Production Systems



Co-funded by the  
Erasmus+ Programme  
of the European Union

Project number: 598963-EPP-1-2018-1-AL-EPPKA2-CBHE-JP

## **Elective Courses Group I – 30 Cr**

### **Food Engineering, Quality & Safety**

1. Advanced food processing technologies – 5 Cr
2. Introduction to sustainable food engineering plant solution - 5 Cr
3. Innovative practices of harvesting and post harvesting – 5 Cr
4. Energetic design of food processing and control /processing of released wastes – 5 Cr
5. Quality System Development, Management and Shelf Life Assessment of Food – 5 Cr
6. Environmental Chemistry towards Food Processing – 5 Cr
7. Ecology for Fish Management and Conservation 5 Cr
8. Innovative product development – 5 Cr



## Elective Courses

### Group II: Management of Food Production Systems – 30 Cr

1. Marketing of Food and Agricultural Products in Albania and Europe – 5 Cr, EUT
2. Planning and Administration of Rural Communities Development – 5 Cr, EUT
3. Management of Sustainable Food Supply Chain – 5 Cr, AUT
4. Innovation and Entrepreneurship for Sustainable Food Production Systems – 5 Cr, EUT
5. Industrial Ecology and Circular economy in Agriculture – 5 Cr, AUT
6. Food Value Chain Management – 5 Cr, EUT
7. Food Legislation – 5 Cr, EUT
8. Consumer science and sustainable consumption – 5 CR, AUT

## Master's Thesis – 30 Cr

- It will be carried out at the FBF/AUT will be made during the 4th and last semester
- It can also be carried out along an internship in a food organization, agency or food companies
- The master thesis will be supervised by the university.



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Program Proposal (AUT)

# Thank you!

# Discussion



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