



People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific
Research



Abbes Laghrou University Khenchela

Training identity sheet

Field: Natural and Life Sciences

Branch: Agricultural sciences

Speciality: Fruit growing - apple growing

Type : Academic

Affiliated structure: Faculty of Natural and Life Sciences, Department of Agronomy

1. Training context and objectives

A. Access conditions

Teaching is organized in such a way as to integrate students into the various levels of the specialty.

Access to the 1st year of the Master's program (M1).

Hold a bachelor's degree in biology (agronomic sciences, plant production, plant improvement) from an Algerian university, or have an equivalent qualification issued by a pedagogical commission on presentation of qualifications and work.

Access to the 2nd year of the Master's program (M2).

Hold a Master's degree (M1) in plant and/or agronomic sciences from an Algerian university, or have an equivalent qualification, issued by a pedagogical committee on presentation of qualifications and work. Candidates (no more than 15 in

number) are not obliged to take the first year at our university, but must have an equivalence in their field of specialization.

B. Training objectives

The plant production sector is undergoing radical change and faces major challenges: global production is set to increase by a factor of 2 by 2050, for a variety of uses, both food and non-food, within a framework of varied objectives and constraints, and with a view to sustainable agriculture, both for production and the environment. A number of changes are currently taking place in the plant sector. In addition to investments in equipment, the mastery of plant technologies will guide the future development of agricultural and horticultural production (fruit, vegetables and ornamentals). Taking into account the environmental impact of plant production implies changes in crop management, the use of phytosanitary products and the choice of cultivated varieties and improved trees. Growing demand for products of high sensory and nutritional quality means we need to master the entire plant production chain, from sowing to marketing.

Enhancement and improvement are achieved by integrating the most recent research results, in order to adapt practices to meet society's qualitative and economic requirements. In this context, the partners involved in the "AF" arboricultural production enhancement training program pool their skills in a wide range of research disciplines, with the aim of improving the quality and yield of seedlings. They contribute to the development of the traditional paths of genetics, genomics, pathology, plant ecophysiology and agronomy, but also to the mastery of new technologies stemming from cell biology, molecular biology and arboriculture.

C. Profiles and business skills :

The "AF" Master's degree is designed to enable students to develop the skills and knowledge they have acquired in their undergraduate studies, in the field of arboricultural production and development (production enhancement). The mix

of lecturers (academics and professionals), visits to private and public companies and contact with researchers involved in the dynamics of plant research aim to train future managers specialized in fruit arboriculture, to facilitate the proper exploitation and development of research results, especially for apple growing, which is undergoing significant development in the region.

D. Regional and national potential for graduate employability

- Fundamental knowledge of plant science and its environment,
- Molecular and biotechnological tools to protect and enhance arboricultural production
- Integration into the socio-economic sector and creation of small businesses for the management, protection and valorization of by-products.
- Acquisition of the methodological foundations of research.
- Integration in the planning and development sector in the realization of global sustainable development projects.

E. Gateways to other specialties

The first year of this master's degree consists of a refresher course and a gateway to other specialties such as :

- Production
- Plant breeding
- Agricultural sciences
- Genomics and plant production
- Plant biotechnology
- Adding value to plant products

F. Training follow-up indicators

- Establishment of a pedagogical committee made up of the teaching staff and the ten best students.
- Monitoring the degree of adherence to subject syllabuses as set out in the master's curriculum.
- Number of unjustified absences.
- Number of students who found a job at the end of their training.
- Number of students involved in the partnership project
- A compulsory 15-week full-time internship in a research laboratory or a private or public company, leading to the writing of a thesis. The theme of the dissertation is chosen in agreement with the promoter and is defended.

2. Training partners

Other universities

- Chadli BenDjedid Taref University
- Larbi Ben M'hidi Oum El Bouaghi University
- Badji-Mokhtar University, Annab
- Université Ferhat Abbas Sétif 1
- Université Mohamed-Chérff Messaadia Souk Ahïas -

Enterprises and other socio-economic partners:

- Direction de formation professionnelle W. Khenchela
- PME Khenchela - Direction de l'environnement de la W. Khenchela - ANSAJ de la W. Khenchela - Cosider Agriculture (Agrico)
- ITCMI - Oum el Bouaghi
- INSID Oum El Bouaghi - Conservation des forets in the wilaya of Khenchela (field trips, practical training and co-supervision).
- Institut de l'Arboriculture Fruitière et Viticulture (ITAFV)

- The Directorate of Agricultural Services (D.S.A.) in the wilaya of Khenchela (reception of student trainees, co-supervision, installation of trials on pilot farms, supply of "sample" biological material).
- Biotechnology, water, environment and health laboratory (University of Khenchela)
- Laboratory for the management, conservation and development of agricultural and natural resources (Khenchela University) (Project in progress)

International partners :

- Université El Manar Tunis (Tunisia) "ongoing project
- Tunisian National Institute of Agronomy

1- Semester 1 :

Teaching Unit	VHS	V.H weekly				Coeff	Credits	Evaluation mode	
	14-16 wks	C	TD	TP	Other			Continu ous	Review
Fundamental EU									
UEF1(O/P)									
Biology and ecology of fruit trees	67h30	1h30	1h30	1h30	82h30	03	06	40%	60%
Tree pathogens	67h30	1h30	1h30	1h30	82h30	03	06	40%	60%
UEF2(O/P)									
Creating orchards	67h30	1h30	/	3h00	82h30	03	06	40%	60%
EU methodology									
UEM1 (O/P)									
Irrigation and drainage	60h00	1h30	1h00	1h30	65h00	03	05	40%	60%
Biostatistics	45h00	1h30	1h30	/	55h00	02	04	40%	60%
EU discovery									
UED1 (O/P)									
Growing system	45h00	1h30	/	1h30	05h00	02	02	40%	60%
Cross-disciplinary courses									
UET1 (O/P)									
Communication	22h30	1h30	/	/	2h30	01	01	/	100%
Total Semester 1	375h00	10h30	5h30	9h00	375h00	17	30		

2- Semester 1 :

3- Semester 2 :

Teaching Unit	VHS	V.H weekly				Coeff	Credits	Evaluation mode	
	14-16 wks	C	TD	TP	Other			Continu ous	Review
Fundamental EU									
UEF1 (O/P)									
Arboricultural techniques	67h30	1h30	/	3h00	82h30	03	06	40%	60%
Soil quality and fertility	45h00	1h30	1h30	/	55h00	02	04	40%	60%
UEF2 (O/P)									
Hardy fruit trees	45h00	1h30	1h30	/	55h00	02	04	40%	60%
Phoeniciculture	45h00	1h30	/	1h30	55h00	02	04	40%	60%
EU methodology									
UEM1 (O/P)									
Creation of a nursery and production of tree seedlings	60h00	1h30	1h00	1h30	65h00	03	05	40%	60%
Agricultural machinery	45h00	1h30	/	1h30	55h00	02	04	40%	60%
EU discovery									
UED1 (O/P)									
Cartography and GIS	45h00	1h30	/	1h30	5h00	02	02	40%	60%
Cross-disciplinary courses									
UET1(O/P)									
Legislation	22h30	1h30	/	/	2h30	01	01	/	100%
Total Semester 2	375h00	12h00	4h00	9h00	375h00	17	30		

4- Semester 3 :

Teaching Unit	VHS	V.H weekly				Coeff	Credits	Evaluation mode	
	14-16 wks	C	TD	TP	Other			Continu ous	Review
Fundamental EU									
UEF1(O/P)									
Apple growing	67h30	1h30	/	3h00	82h30	03	06	40%	60%
In-vitro cultivation and arboriculture	67h30	1h30	/	3h00	82h30	03	06	40%	60%
UEF2(O/P)									
Phytopathology of apple trees	67h30	1h30	1h30	1h30	82h30	03	06	40%	60%
EU methodology									
UEM1(O/P)									
Adding value to arboricultural products and by-products	60h00	1h30	1h00	1h30	65h00	03	05	40%	60%
Apple tree management	45h00	1h30	/	1h30	55h00	02	04	40%	60%
EU discovery									
UED1(O/P)									
Precision farming	45h00	1h30	1h30	/	5h00	02	02	40%	60%
Cross-disciplinary courses									
UET1(O/P)									
Entrepreneurship	22h30	1h30	/	/	2h30	01	01	/	100%
Total Semester 3	375h00	10h30	4h00	10h30	375h00	17	30		

Semester 4:

Internship in a company sanctioned by a thesis and a defense.

	VHS	Coeff.	Credits
Work Personnel	300h	10	20
Internship in company	75h	05	10
Seminars	-	-	-
Other(specify)	-	-	-
Total Semester4	375h	15	30

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