UNIVERSITÀ DEGLI STUDI DI PALERMO

Department: Agricultural, Food and Forestry Science

A.Y. 2022/2023

DEGREE COURSE IN AGROENGINEERING AND FORESTRY SCIENCES AND TECHNOLOGIES

- AGRICULTURAL ENGINEERING SCIENCES AND TECHNOLOGIES (LM-69) -

Characteristics

Class of Master's Degree (MSc) on Agricultural sciences (LM-69)	2 YEARS	PALERMO	FREE ACCESS	2259
Class of Master's Degree (MSc) on Environmental and forestry sciences (LM-73)	2 YEARS	PALERMO	FREE ACCESS	2259

Educational objectives

Specific educational objectives:

The Degree course provides advanced training on professional and research issues in the field of Agroengineering and Forestry Science and technologies, enabling students to face and manage complex problems related to the planning, design, management, conservation and evaluation of agri-forest ecosystems.

These objectives take into account the path included in the European Green Deal and in the UN Sustainable Development Goals of 2015.

The educational programme is based on highly topical professional issues and makes use of the experience gained in the research activity carried out by the professors of the Agricultural, Food and Forestry Sciences Department not only in the Sicilian territory, but also in the national and international context. Therefore, the practical experiences of the continuous and updated research of the teachers are poured into the teachings.

The Degree Course aims at training experts in the agro-engineering management of the rural territory and experts in the forest-wood system. The specific objective of the Degree Course is to develop the skills needed to face and manage complex problems, namely in: i) the precision management of agricultural production systems; ii) the use and management of water resources; iii) the territorial planning and analysis of production processes; iv) the management and conservation of forest ecosystems; v) the organization and enhancement of the forest-wood supply chain and biomass production; vi) the survey, representation and defence of the territory, the management and restoration of hydro-geological instability; vii) the organization and management of agro-forestry companies also in relation to the European Union guidelines for agro-environmental policies.

The inter-class 2nd cycle degree course in "Agroengineering and Forestry Sciences and Technologies" provides in the first year a common curricular path including teachings mainly in the economic-legal, production, forestry and environmental, defence, agricultural engineering fields. In the second year, the path is divided into two profiles, a first (class LM-69) mainly oriented towards the agro-engineering management of the territory and a second one (class LM-73) characterized by aspects linked to the forest-wood system. In particular, graduates acquire, through the Lm-69 path, specialist skills related to the design of agro-engineering works, the planning and management of the agro-forest territory with particular attention to the protection of natural resources, soil protection, to management through modern precision agriculture technologies. The issues related to the management and protection of the forest heritage, the enhancement of wood and non-wood products, the management of agro-forestry companies, the planning and management of the agro-forestry territory with particular attention to the protection of natural resources, the soil defence, are privileged in the LM-73 path.

Educational activities consist of lectures, laboratory and field exercises, specialized seminars, and possible ongoing tests. To achieve the final qualification, students must have acquired 120 credits (CFU). Each frontal credit corresponds to 10 hours, while each CFU reserved for exercises, laboratory activities corresponds to 12 hours. The educational programme consists of 12 mandatory exams including elective activities, other training activities aimed at acquiring in-depth linguistic knowledge, as well as highly professional skills directly linked to the labour market, carried out in laboratory form (9 CFU).

With reference to these activities, it is worth specifying that the course includes activities related to the agricultural sector, to the agricultural industry, to precision agriculture technologies and to the defence from the main plant diseases, as well as to the forestry sector, with laboratory activities related to mycology, geomatics and reforestation techniques. The student's

training is completed by a practical/applicative internship at accredited premises, such as Italian and foreign companies (through the Erasmus + Traineeship program), public and private agencies, professional firms, non-governmental organizations. The educational programme is completed by finally by the final exam related to specific topics addressed during the course.

On the basis of the choice made, at the end of the Course students can obtain the 2nd cycle Degree in "Agroengineering and Forestry Sciences and Technologies" in class LM-69 or in class LM-73, and after passing the relevant national qualification examination, they can register in section A of the professional register of the Board of Doctors of Agronomy and Forestry.

Professional opportunities

Profile:
Agro-engineering specialist

Functions:
Agroengineers are professionals capable of responding to the needs of public bodies, of the business world, and of freelance profession in terms of planning, management and evaluation actions in agro-forestry systems. They can register in section A of the Professional Register of Agronomists and Forestry Doctors.

Skills:
The specific skills acquired through the degree course and the related functions enable them to carry out their professional activity in the following areas:
- Drafting of improvement and development projects of the rural territory.
- Planning of agricultural, zootechnical, and environmental systems.
- Consultancy in the field of rural land planning.
- Representation of the territory and of its resources.
- Preparation of environmental impact assessment studies in the protected areas of the Natura 2000 network.
- Planning of interventions to control hydrogeological instability and soil degradation.
- Management of precision agriculture technologies that can be implemented in agro-forestry production systems.
- Management and organization of agro-forestry-pastoral companies
- Drafting of estimates of land and environmental assets, of plants and forestry products in the supply chain.
- Implementation of projects financed under the rural development policy and under the Community policies.

Professional opportunities:
- Self-employment and employee activity as officials or managers in national and international public institutions such as: National and Regional Park Bodies, State Forestry Corps, Ministries, Regions, Mountain Communities, Municipalities, FAO, Environment Protection Agencies, United Nations Agencies with expertise in the forestry sector, Companies and Agencies carrying out research and innovation activities in the forestry and environmental sector.
Graduates in Agroengineering and Forestry Sciences and Technologies can participate in competitions requiring a degree in classes LM-69 and LM-73 is required.
Graduates in Agroengineering and Forestry Sciences and Technologies who have acquired a sufficient number of credits in the sectors envisaged by current legislation will be able to participate in the admission tests for training courses for teaching in secondary schools. They can also access PhD courses and 2nd cycle University Master Courses.

Profile:
Expert in forest systems management

Functions:
Experts in forest systems management are professionals working in the management, maintenance and control of forest systems, able to respond to the needs of public bodies as well as to those of the business world and of the freelance profession. They can register in section A of the Professional Register of Agronomists and Forestry Doctors.

Skills:
The specific skills acquired through the Degree course and the related functions enable them to practice the profession in the following areas:
- Planning of forest and environmental systems.
- Drafting of projects for the redevelopment and recovery of degraded forest areas.
- Dendrometric and auxometric analysis.
- Consultancy in the field of rural land planning.
- Drafting of environmental impact assessment studies in the protected areas of the Natura 2000 network.
- Drafting of management and settlement plans for forest areas.
- Representation of the territory and its resources
- Planning of interventions to control hydrogeological instability and soil degradation.
-- Management and organization of agro-forestry-pastoral companies.
- Valuation of land and environmental assets, of plants and forestry products in the supply chain.
- Implementation of projects financed under the rural development policy and in the framework of Community policies.

Professional opportunities:

Legenda: Per. = periodo o semestre, Val. = Valutazione (V=voto, G=giudizio), TAF= Tipologia Attività Formativa (A=base, B=caratterizzante, C=Affine, S=stages, D=a scelta, F=altre)

- Self-employment and employee activity as officials or managers in national and international public institutions such as: National and Regional Park Bodies, State Forestry Corps, Ministries, Regions, Mountain Communities, Municipalities, FAO, Environment Protection Agencies, United Nations Agencies in the forestry sector, Companies and Agencies carrying out research and innovation activities in the forestry and environmental sector.

2nd cycle Graduates in Agroengineering and Forestry Sciences and Technologies can participate in competitions for the recruitment of the National Forestry Corps officials.

Graduates in Agroengineering and Forestry Sciences and Technologies who have acquired a sufficient number of credits in the sectors envisaged by current legislation will be able to participate in the admission tests for training courses for teaching in secondary schools. They can also access PhD courses and 2nd cycle University Master Courses.

Final examination features

The degree is obtained by passing the final examination. To be admitted to the final examination, students must: - Have passed all the exams and have acquired the CFU related to class-specific, related and integrative activities as well as to elective activities, and to additional educational activities. - Have done an internship at public or private institutions, companies and/or professional offices in the agro-sylvo-pastoral sector and have prepared a specific paper summarizing the activities carried out during the internship period, as required by the educational regulations. -Have carried out an experimental thesis activity, consisting in the execution of an experimental part, in the elaboration and discussion of the results, and in the preparation of an original paper, written under the guidance of a supervisor. The final examination consists of the discussion of the written paper in front of a Board of Professors appointed by the relevant academic bodies. The final examination aims at the assessment the student's ability to prepare a written paper related to his/her academic training, as well as to defend it in front of experts in the sector. The student's career and the quality of the final paper contribute to the evaluation of the final examination, in compliance with the criteria defined in the regulations of the Board of the Degree Course.

Subjects 1 ° year	CFU	Sem.	Val.	SSD	TAF
22482 - AGRI-ENVIRONMENTAL MICROBIOLOGY *Settanni(PO)*	6	1	V	AGR/16	B
20923 - ENVIRONMENTAL IMPACT ASSESSMENT *Schicchi(PO)*	6	2	V	BIO/03	C
15406 - REMOTE SENSING AND TERRITORIAL INFORMATION SYSTEMS *Di Stefano(PO)*	6	2	V	AGR/10	B
Optional subjects	6				B
Optional subjects II	6				B
Optional subjects III	6				C
Optional subjects IV	9				B
Free subjects (suggested)	9				D
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Subjects 2 ° year	CFU	Sem.	Val.	SSD	TAF
20928 - CONSERVATION AND GENETIC MANAGEMENT OF ZOOTECHNICAL BIODIVERSITY *Sardina(PA)*	6	1	V	AGR/17	B
20927 - PRECISION TREE FARMING MANAGEMENT *Massenti(RD)*	9	1	V	AGR/03	B
19774 - ENGLISH LANGUAGE - B2	3	1	G		F
07553 - PROFESSIONAL PRACTICE	12	1	G		F
21844 - AGRO-FOREST ROAD PLANNING *Laschi(PA)*	6	2	V	AGR/05	C
21735 - WATER RESOURCES MANAGEMENT AND SOIL DEFENCE	9	2	V		
- AGRICULTURAL SOIL HYDRAULIC PROTECTION *Serio(RD)*	*3*	*1*		*AGR/08*	*B*
- WATER RESOURCES MANAGEMENT *Autovino(RD)*	*6*	*2*		*AGR/08*	*B*
19646 - LABORATORY OF MECHANISATION FOR PRECISION AGRICULTURE *Comparetti(PA)*	3	2	G		F
05917 - FINAL EXAMINATION	18	2	G		E

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Subjects 2 ° year	CFU	Sem.	Val.	SSD	TAF
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OPTIONAL SUBJECTS

Optional subjects	CFU	Sem.	Val.	SSD	TAF
19124 - AGRONOMIC IRRIGATION AND PHYTODEPURATION TECHNIQUES *Licata(PA)*	6	2	V	AGR/02	B
19133 - SPECIAL ALPICULTURE *Ruisi(PA)*	6	2	V	AGR/02	B

Optional subjects II	CFU	Sem.	Val.	SSD	TAF
21742 - AGRICULTURAL ARTHROPOD CONTROL AND FAUNAL INDICATORS *Lo Verde(PA)*	6	2	V	AGR/11	B
21843 - FOREST ARTHROPODS CONTROL AND FAUNAL PLANNING *Caleca(PA)*	6	2	V	AGR/11	B

Optional subjects III	CFU	Sem.	Val.	SSD	TAF
21790 - SOIL EVALUATION AND RECOMPOSITION	6	1	V		
- SOIL EVALUATION *Dazzi(PO)*	3	1	V	AGR/14	C
- RECOVERY OF DEGRADED AREAS *Conte(PO)*	3	1	V	AGR/13	C
21789 - SOILS AND QUALITY INDICATORS	6	1	V		
- AGRICULTURAL PEDOLOGY *Dazzi(PO)*	3	1	V	AGR/14	C
- SOIL QUALITY INDICATORS *Laudicina(PO)*	3	1	V	AGR/13	C

Optional subjects IV	CFU	Sem.	Val.	SSD	TAF
21723 - BUSINESS ORGANISATION AND MANAGEMENT AND FOREST VALUATION	9	1	V		
- ORGANISATION AND STRATEGIC MANAGEMENT OF AGRO-FOREST BUSINESS *Galati(PO)*	6	1	V	AGR/01	B
- FOREST VALUATION - WORKSHOP *Di Franco(PA)*	3	1	V	AGR/01	B
21728 - EU AGRICULTURAL POLICY AND TERRITORIAL EVALUATION	9	1	V		
- EU AGRICULTURAL POLICY *Crescimanno(PO)*	6	1	V	AGR/01	B
- LAND VALUATION WORKSHOP *Di Franco(PA)*	3	1	V	AGR/01	B

Free subjects (suggested)	CFU	Sem.	Val.	SSD	TAF
18466 - AGRO-ENERGIES *Leto(PO)*	3	1	V	AGR/02	D
18752 - APPLIED AGRO-METEOROLOGY *Leto(PO)*	3	1	V	AGR/02	D
21724 - ENHANCEMENT OF RURAL VILLAGES *Tuzzolino(PO)*	3	1	V	ICAR/14	D
20922 - GREEN MARKETING AND ENVIRONMENTAL CERTIFICATIONS *Galati(PO)*	3	2	V	AGR/01	D

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OPTIONAL SUBJECTS

Free subjects (suggested)	CFU	Sem.	Val.	SSD	TAF
21791 - HABITAT DIRECTIVE *Gianguzzi(PA)*	3	2	V	BIO/03	D
22483 - MACHINES, TOOLS AND TECHNIQUES FOR PRECISION AGRICULTURE *Comparetti(PA)*	3	1	V	AGR/09	D
11561 - NATURALISTIC ENGINEERING TECHNIQUES *Ferro(PO)*	3	2	V	AGR/08	D
21726 - FOOD PPROCESS TECHNOLOGY - LABORATORY *Todaro(PA)*	3	1	V	AGR/15	D
22695 - PHYTOPATHOLOGICAL DIAGNOSTICS *Caruso(RD)*	3	2	V	AGR/12	D

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