

Land and Water Resources Management: Irrigated Agriculture 2019-2020 (66.0 ECTS)

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Aims

The aim of the Programme in “Land and Water Resources Management: Irrigated agriculture” is to improve capacities of high-ranking officials and professionals, both agronomists and engineers, in land and water resources management in the Mediterranean region. The Programme is structured in 2 parts: the first part, the Master Programme, is based on an intensive learning course and on the elaboration of an irrigation project; the second part, the Master of Science Programme (MSc), is dedicated to the acquisition of research methodologies and to the development of a scientific applied research work.

Objectives

The main objective of the Master Programme in "Land and Water Resources Management: Irrigated agriculture" is to improve scientific knowledge and technological know-how of the candidates in water saving and land conservation issues through the completion of specific research themes and experimental works. The course is structured in such a way as to promote land and water resources management in the Mediterranean considering agronomic, engineering, environmental and socio-economic aspects on different scales.

Programme contents

L&W I	UNIT I : INTRODUCTORY COURSES	30 Sep - 10 Dec 2019	4.0 ECTS
L&W I.1.2	Institute & course presentation	30 Sep 2019	0.0 ECTS
L&W I.1.1	Welcome & registration	30 Sep 2019	0.0 ECTS
L&W I.1.3	Visit to the campus facilities	30 Sep 2019	0.0 ECTS
L&W I.1.4	Former Trainees Network (FTN)	30 Sep 2019	0.0 ECTS
L&W I.1.6	Climate change & agriculture / Biodiversity & crops / Transboundary plants pests & diseases	01 Oct 2019	0.5 ECTS
L&W I.1.5	Information and Communication Technologies / Criteria for bibliographic research	01 Oct 2019	1.0 ECTS
L&W I 1.10	Test	04 Oct 2019	0.0 ECTS
L&W I 2.2	English Language. Entry test	07 Oct 2019	ECTS
L&W I 2.1	Communication skills / High technologies for agriculture: Geographical Information Systems/ High technologies for agriculture: Remote Sensing / High technologies for agriculture: Information Technology	07 Oct 2019	0.5 ECTS
L&W I 2.3	English language	08 Oct - 10 Dec 2019	2.0 ECTS
	Test	11 Oct 2019	0.0 ECTS
L&W II	UNIT II : WATER AND LAND RESOURCES MANAGEMENT	14 Oct - 29 Nov 2019	14.0 ECTS
L&W II.1	Pedology and soil survey investigation	14 - 18 Oct 2019	2.0 ECTS
L&W II.2.2	Remote sensing	21 - 25 Oct 2019	1.0 ECTS
L&W II.2.1	Application of Geographic Information Systems in Land and Water Resources Management	21 - 25 Oct 2019	1.0 ECTS
L&W II.3	Surface water hydrology management	28 - 31 Oct 2019	2.0 ECTS
L&W II.4	Soil physics: water and solute movements	04 - 08 Nov 2019	2.0 ECTS
L&W II.5	Groundwater hydraulics and pollution in agricultural settings	11 - 15 Nov 2019	2.0 ECTS
L&W II.6	Soil erosion and desertification: monitoring, modelling and mitigation technologies	18 - 22 Nov 2019	2.0 ECTS
L&W	Water harvesting techniques	25 - 29 Nov	2.0

II.7		2019 ECTS
L&W III	UNIT III : IRRIGATION MANAGEMENT: SOIL-WATER-PLANT-ATMOSPHERE CONTINUUM	02 Dec 2019 - 8.0 03 Jan 2020 ECTS
L&W III.1	Agrometeorology + Seminar on climate change	02 - 06 Dec 2.0 2019 ECTS
L&W III.2	Crop response to water and water use efficiency	09 - 13 Dec 2.0 2019 ECTS
L&W III.3	Crop water requirements and practical irrigation scheduling	16 - 20 Dec 2.0 2019 ECTS
L&W III.4.1	Crop growth modelling: Eco-physiological and engineering aspects	30 Dec 2019 - 2.0 03 Jan 2020 ECTS
L&W III.4.2	Agricultural aspects of irrigation methods	30 Dec - 03 Jan 2019
L&W IV	UNIT IV : IRRIGATION MANAGEMENT AT FARM LEVEL	07 - 24 Jan 6.0 2020 ECTS
L&W IV.1	Design, operation, maintenance and performance evaluation of sprinkler irrigation systems	07 - 10 Jan 2.0 2020 ECTS
L&W IV.2	Design, operation, maintenance and performance evaluation of farm trickle irrigation systems	13 - 17 Jan 2.0 2020 ECTS
L&W IV.3	Design, operation, maintenance and performance evaluation of surface irrigation systems	20 - 24 Jan 2.0 2020 ECTS
L&W V	UNIT V : IRRIGATION MANAGEMENT: AT DISTRIBUTION SYSTEMS LEVEL	27 Jan - 14 6.0 Feb 2020 ECTS
L&W V.1	Design, operation, maintenance and performance evaluation of large scale open channel distribution systems / Technical visit to Consorzio Stornara& Tara	27 - 31 Jan 2.0 2020 ECTS
L&W V.2.1	Design, operation, maintenance and performance evaluation of large scale pressurized irrigation systems & Technical visit to Consorzio Capitanata	03 - 07 Feb 2.0 2020 ECTS
L&W V.2.2	Determining soil hydraulic properties by field-measured infiltration rates.	05 Feb 2020
L&W V.3.1	Water management optimisation	10 - 14 Feb 2.0 2020 ECTS
L&W V.3.2	Water resources management: the FAO approach	12 Feb 2020
L&W VI	UNIT VI : USE OF NON-CONVENTIONAL WATER RESOURCES: TECHNICAL AND ENVIRONMENTAL ISSUES	17 Feb - 13 8.0 Mar 2020 ECTS
L&W VI.1	Salinity control in relation to irrigation	17 - 21 Feb 2.0 2020 ECTS
L&W VI.2	Drainage and drainage systems design and management	24 - 28 Feb 2.0 2020 ECTS
L&W VI.3.1	Use of low quality waters: environmental and technical aspects	02 - 06 Mar 2.0 2020 ECTS
L&W VI.3.2	Wastewater reuse in irrigation farming	03 Mar 2020
L&W VI.3.3	Non-conventional water use	04 Mar 2020
L&W VI.4	Urban wastewater treatment for agricultural reuse	09 - 13 Mar 2.0 2020 ECTS
L&W VII	UNIT VII : IRRIGATION MANAGEMENT: INSTITUTIONAL, ECONOMIC AND ENVIRONMENTAL ASPECTS	16 Mar - 17 10.0 Apr 2020 ECTS
L&W VII.1	Principles of farm economics	16 - 20 Mar 2.0 2020 ECTS
L&W VII.2	Optimal water allocation in irrigation sector	23 - 27 Mar 2.0 2020 ECTS
L&W VII.3	International economics and the role of agriculture in economic development	30 Mar - 03 2.0 Apr 2020 ECTS
L&W VII.3.1	Geopolitics of water in the Mediterranean and Middle East	01 - 02 Apr 2020
L&W VII.4	Participatory irrigation management (PIM) and transfer (IMT) in a monitoring & evaluation perspective	06 - 07 Apr 1.0 2020 ECTS
L&W VII.5	Cost recovery	07 - 10 Apr 1.0 2020 ECTS

L&W VII.6	Cost/Benefit analysis	14 - 17 Apr 2020	2.0 ECTS
L&W VIII	UNIT VIII : CASE STUDY – IRRIGATION PROJECT DESIGN	27 Apr - 12 Jun 2020	10.0 ECTS
L&W VIII.1	Agronomic part of project	27 - 30 Apr 2020	2.0 ECTS
L&W VIII.2	Economic part of project	04 - 08 May 2020	2.0 ECTS
L&W VIII.2.1	Synthesis of agronomic & economic part of project	11 - 15 May 2020	0.0 ECTS
L&W VIII.2.2	Water economics	13 - 15 May 2020	0.0 ECTS
L&W VIII.3	Engineering part of project	18 - 22 May 2020	2.0 ECTS
L&W VIII.3.1	GIS	18 May 2020	0.0 ECTS
L&W VIII.4.1	Technical visit to a Pumping stations site	25 - 29 May 2020	0.0 ECTS
L&W VIII.4.0	Engineering part of project	25 - 29 May 2020	2.0 ECTS
L&W VIII.4.2	Seminar: Accessories in the network irrigation and pumping station	25 - 29 May 2020	0.0 ECTS
L&W VIII.4.3	AutoCAD	25 May 2020	0.0 ECTS
L&W VIII.5	Cost/benefit analysis of irrigation project	29 May - 01 Jun 2020	1.0 ECTS
L&W VIII.6	Environmental impact assessment. Applications	03 - 05 Jun 2020	1.0 ECTS
L&W VIII.7	Conclusions and Synthesis	08 - 12 Jun 2020	0.0 ECTS
L&W IX	FINAL EXAMS	15 - 16 Jun 2020	0.0 ECTS
	Final Exams	15 - 16 Jun 2020	