

Land and Water Resources Management: Irrigated Agriculture 2018-2019 (70.0 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	01 - 19 Oct 2018	7.0 ECTS
L&W I.1.2	English language	01 - 05 Oct 2018	2.0 ECTS
L&W I.1.1	Information and Communication Technologies & Criteria for bibliographic research	01 - 05 Oct 2018	1.0 ECTS
L&W I.2	Application of Geographic Information Systems in Land and Water Resources Management	08 - 12 Oct 2018	2.0 ECTS
L&W I.3	Pedology and soil survey investigation	15 - 19 Oct 2018	2.0 ECTS
L&W II	UNIT II : LAND AND WATER RESOURCES MANAGEMENT	22 Oct - 23 Nov 2018	10.0 ECTS
L&W II.1	Soil physics: water and solute movements	22 - 26 Oct 2018	2.0 ECTS
L&W II.2	Surface water hydrology management	29 Oct - 02 Nov 2018	2.0 ECTS
L&W II.3.1	Groundwater hydraulics and pollution in agricultural settings	05 - 09 Nov 2018	2.0 ECTS
L&W II.4	Soil erosion and desertification: monitoring, modelling and mitigation technologies	12 - 16 Nov 2018	2.0 ECTS
L&W II.5	Water harvesting techniques	19 - 23 Nov 2018	2.0 ECTS
L&W III	UNIT III : IRRIGATION MANAGEMENT: SOIL-WATER-PLANT-ATMOSPHERE CONTINUUM	26 Nov - 21 Dec 2018	8.0 ECTS
L&W III.1	Agrometeorology + Seminar on climate change	26 - 30 Nov 2018	2.0 ECTS
L&W III.2	Crop response to water and water use efficiency	03 - 07 Dec 2018	2.0 ECTS
L&W III.3	Crop water requirements and practical irrigation scheduling	10 - 14 Dec 2018	2.0 ECTS
L&W III.4.1	Crop growth modelling: Eco-physiological and engineering aspects	17 - 21 Dec 2018	2.0 ECTS
L&W III.4.2	Water stress and drought	19 Dec 2018	0.0 ECTS
L&W III.4.3	Agricultural aspects of irrigation methods	20 Dec 2018	
L&W IV	UNIT IV : IRRIGATION MANAGEMENT AT FARM LEVEL	02 - 18 Jan 2019	6.0 ECTS
L&W IV.1	Design, operation, maintenance and performance evaluation of sprinkler irrigation systems	02 - 05 Jan 2019	2.0 ECTS
L&W	Design, operation, maintenance and performance evaluation of farm trickle irrigation systems	07 - 11 Jan	2.0

IV.2		2019	ECTS
L&W	Design, operation, maintenance and performance evaluation of surface irrigation systems	14 - 18 Jan	2.0
IV.3		2019	ECTS
L&W V	UNIT V : IRRIGATION MANAGEMENT: AT DISTRIBUTION SYSTEMS LEVEL	21 Jan - 08 Feb 2019	6.0 ECTS
L&W	Design, operation, maintenance and performance evaluation of large scale open channel distribution systems / Technical visit to Consorzio Stornara& Tara	21 - 25 Jan	2.0
V.1		2019	ECTS
L&W	Design, operation, maintenance and performance evaluation of large scale pressurized irrigation systems & Technical visit to Consorzio Capitanata	28 Jan - 01 Feb 2019	2.0 ECTS
V.2.1			
L&W	Determining soil hydraulic properties by field-measured infiltration rates.	30 Jan	2019
V.2.2			
L&W	Water management optimisation	04 - 08 Feb	2.0
V.3.1		2019	ECTS
L&W	Water resources management: the FAO approach	06 Feb	2019
V.3.2			
L&W VI	UNIT VI : USE OF NON-CONVENTIONAL WATER RESOURCES: TECHNICAL AND ENVIRONMENTAL ISSUES	11 Feb - 08 Mar 2019	8.0 ECTS
L&W	Salinity control in relation to irrigation	11 - 15 Feb	2.0
VI.1		2019	ECTS
L&W	Drainage and drainage systems design and management	18 - 22 Feb	2.0
VI.2		2019	ECTS
L&W	Use of low quality waters: environmental and technical aspects	25 Feb - 01 Mar 2019	2.0 ECTS
VI.3.1			
L&W	Wastewater reuse in irrigation farming	26 Feb	2019
VI.3.2			
L&W	Non-conventional water use	27 Feb	2019
VI.3.3			
L&W	Urban wastewater treatment for agricultural reuse	04 - 08 Mar	2.0
VI.4		2019	ECTS
L&W VII	UNIT VII : IRRIGATION MANAGEMENT: INSTITUTIONAL, ECONOMIC AND ENVIRONMENTAL ASPECTS	11 Mar - 12 Apr 2019	10.0 ECTS
L&W	Principles of farm economics	11 - 15 Mar	2.0
VII.1		2019	ECTS
L&W	Optimal water allocation in irrigation sector	18 - 22 Mar	2.0
VII.2		2019	ECTS
L&W	Cost/Benefit analysis	25 - 29 Mar	2.0
VII.3		2019	ECTS
L&W	Participatory irrigation management (PIM) and transfer (IMT) in a monitoring & evaluation perspective	01 - 02 Apr	1.0
VII.4		2019	ECTS
L&W	Cost recovery	02 - 05 Apr	1.0
VII.5		2019	ECTS
L&W	International economics and the role of agriculture in economic development	08 - 12 Apr	2.0
VII.6.		2019	ECTS
L&W	Geopolitics of water in the Mediterranean and Middle East	08 - 09 Apr	2019
VII.6.1			
L&W	UNIT VIII : CASE STUDY – IRRIGATION PROJECT DESIGN	23 Apr - 07 Jun 2019	10.0 ECTS
VIII			
L&W	Agronomic part of project	23 - 27 Apr	2.0
VIII.1		2019	ECTS
L&W	Economic part of project	29 Apr - 04 May 2019	2.0 ECTS
VIII.2			
L&W	Synthesis of agronomic & economic part of project	06 - 07 May	0.0
VIII.2.1		2019	ECTS
L&W	Water economics	08 - 09 May	0.0
VIII.2.2		2019	ECTS
L&W	Engineering part of project	13 - 17 May	2.0
VIII.3		2019	ECTS
L&W	GIS	13 - 17 May	0.0
VIII.3.1		2019	ECTS
L&W	Seminar: Accessories in the network irrigation and pumping station	20 - 24 May	0.0
VIII.4.2		2019	ECTS

L&W	Engineering part of project	20 - 24 May	2.0
VIII.4		2019	ECTS
L&W	AutoCAD	20 May 2019	0.0
VIII.4.3			ECTS
L&W	Technical visit to a Pumping stations site	20 - 24 May	0.0
VIII.4.1		2019	ECTS
L&W	Cost/benefit analysis of irrigation project	27 - 28 May	1.0
VIII.5		2019	ECTS
L&W	Environmental impact assessment. Applications	29 - 31 May	1.0
VIII.6		2019	ECTS
L&W	Conclusions and Synthesis	03 - 07 Jun	0.0
VIII.7		2019	ECTS
L&W IX	FINAL EXAMS	10 - 12 Jun	0.0
		2019	ECTS
	Final Exams	10 - 12 Jun	
		2019	
	From a business idea to its project design: the enterprise culture in the innovation process management	18 - 21 Jun	5.0
		2019	ECTS
	Innovation processes: the design and development phases of an innovative idea	18 Jun 2019	2.0
			ECTS
	The Lean Business model Canvas	19 Jun 2019	2.0
			ECTS
	The WEB as tool to develop and communicate the entrepreneurial idea	20 Jun 2019	1.0
			ECTS
	Final exam: presentation (pitch) of an innovative entrepreneurial idea.	21 Jun 2019	0.0
			ECTS