

MASTER ACT : M1 - ES (Sevilla)

1 SEMESTRE (33,5 ECTS)

**Summer Course
(2 ECTS)**

**English
(3 ECTS)**

**Basic principles and concepts
of Agroecology
(7.5 ECTS)**

**Introduction to the history of
agrarian systems
(3.5 ECTS)**

**Agrarian resources and
climate change
(10,5 ECTS)**

**Sustainable Agrarian Systems
(7 ECTS)**

2 SEMESTRE (26,5 ECTS)

**Agroecosystems' management
(9 ECTS)**

**Sustainable Rural Development
(3,5 ECTS)**

**Methodologies for agroecosystems'
design and management
(6ECTS)**

**Project management
(5 ECTS)**

**Summer Course
(3 ECTS)**

M1- SEMESTER 1

TRACK	Subject	ECTS	Teachers
ENGLISH	Upraising course to B2 level	3	
I-Basic principles and concepts of Agroecology (7.5)	Ecological basis of Agroecology	1	R. García G. Guzmán M. Gual M. González de Molina E. Aguilera
	Agronomical basis of Agroecology	1	
	Social and economical basis of Agroecology	1	
	Agroecology in Central and South America and Caraibes and in Europe	1	
	Agroecological transition	1,5	
	Agroecology and climate change	2	

M1- SEMESTER 1

TRACK	Subject	ECTS	Teachers
II-Introduction to the history of agrarian systems (3.5)	Agrarian metabolism and socioeconómica transition	0,5	J.Infante D. Soto M González de Molina G.Guzmán
	First agrarian revolution	0,5	
	Agrarian systems organically based	0,5	
	Different waves of the transition towards industrial metabolism	1	
	From an agrarian perspective to an environmental one	0,5	
	A new transition towards sustainable farm systems	0,5	

M1- SEMESTER 1

TRACK	Subject	ECTS	Teachers
III- Agrarian resources and climate change (10,5) Interactions with the context (5)	Soil and water as basic resources for agriculture	2	A. Delgado E. Carmona
	Genetic resources and biodiversity. Germoplasm banks. (Animal 0,5 & Plants 0,5)	1	M.T. Moreno I. Aguirre M. Valera
	Impacts for environmental impact in agriculture and livestock production	1	Y. Mena J.M. Quintero
	Farm typology according to their relation to the environment (Animal 0,5 & Plants 0,5)	1	V. Fernandez
III-Agrarian resources and climate change (10,5) Plant production (4)	Plant ecophysiology. Answers to stress	2	A. Delgado E. Carmona
	Environmental impact of agriculture. Influence of agriculture in the climate change and the opposite.	1	I. Aguirre J.M. Quintero
	Effects of climate change in plant health.	1	M. Aviles

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M1- SEMESTER 1

TRACK	Subject	ECTS	Teachers
III- Agrarian resources and climate change. (10,5) Livestock (1,5)	Animal ecophysiology: adaptation to the environmental stress	0,5	M. Valera V. Fernández
	Role of livestock in the climate change and ecosystem degradation	0,5	
	Efficient use of resources in animal production, within a climate change context	0,5	

M1- SEMESTER 1

TRACK	Subject	ECTS	Teachers
IV- Sustainable food systems (7)	Ecological economy: principles and tools	0,5	UPO
	Tools and criteria in ecological economy for resource management: water and energy	0,5	UPO
	Sustainability indicators in ecological economy for agriculture	0,5	UPO
	Farm economy. Impact of climate change in economical viability	1	UPO
	Sustainable food systems in a climate change context	1	UPO
	Food security versus food sovereignty	0,5	UPO
	Livestock sustainable production systems: cases of study.	1	Y. Mena V. Fernández
	Quality and valorización of agrofood products	2	I.Aguirre A.Horcada
ENGLISH		3	

M1- SEMESTER 2

TRACK	Subject	ECTS	Teachers
V- Agroecosystems' management (9) Plant management (5)	Water and soil management	2	A. Delgado M.T. Moreno JM. Quintero L. Andreu M. Aviles J.M. Urbano E. Carmona
	Simulation models and their application in agriculture	0,5	
	Climate control	0,5	
	Nutrient's management	1	
	Plant health management	1	
V- Agroecosystems' management (9) Livestock management (2)	Basic principles of livestock management in agroecosystems	2	M. Valera V. Fernández A. Horcada
V- Agroecosystems' management (9) Plant and livestock systems (1)	Livestock and plant integration	1	Y. Mena I.Aguirre. V. Fernandez
V- Agroecosystems' management	Organic farming systems	0,5	Y. Mena

M1- SEMESTER 2

TRACK	Subject	ECTS	Teachers
VI-Sustainable Rural Development (3,5)	Basic concepts of development. Their application to agriculture and in rural societies	1	M. González de Molina F. Garrido E. Torremocha
	Theories of development in the conventional and alternative scientific paradigms.	0,5	
	Agroecological extensionism	0,5	(in SP / EN)
	Public policies for agrarian sustainability and for climate change	1,5	

M1- SEMESTER 2

TRACK	Subject	ECTS	Teachers
VII- Methodologies for agroecosystems' design and management (6)	Indicators and methodologies for a multicriteria analysis for assessing sustainability in agrarian systems (plants & livestock)	2	I.Aguirre Y. Mena M.González de Molina G. Guzmán M. Valera.
	Assessment of the agroecosystems fonctionnement		
	Agrarian metabolism	1,5	
	Participative approach for designing agrarian technologies	1,5	
	Measure and valorization of agroecosystems' services	1	
VIII- Project management (5)	Institutional context and tipologies of projects		E. Cuoco
	Project design and definition		E. Torremocha
	Tools for project management		
	Monitoring and project evaluation		in SP/EN