



Specialization « Management of territories and local development », pathway of Master 2

## AGRICULTURAL MANAGEMENT AND TERRITORIES

co-accredited with the University Paul Valéry Montpellier 3 (UPVM3).

This Master offers the possibility to pursue a research career (PhD studies)

Master of Science

## AGRICULTURAL MANAGEMENT AND TERRITORIES

2020/2021

### OBJECTIVE

The aim of this master is to train students for works in agricultural production systems management, taking account of the specific characteristics of territories with a both technical and economic approach. To this end, the training offers both a learning of the theoretical and practical tools and the acquisition of professional experience (individual and collective internships), thus enabling students to be in contact with the local actors and the realities on the ground so as to be operational by the end of the training.

The training enables to acquire:

- Knowledge: Analysis of the technical and economic functioning of a farm and of an farming region,
- Know-how: Implementation of decision-making methods, preliminary analysis and strategic steering in a consultancy process at an individual or collective level. Elaboration of optimization models for the technical and production choices made in the farm and at the regional level. Linking of bio-physical and economical models for decision-making in the field of natural resources management and diffuse pollution management in agriculture,
- Personal skills: Work in multidisciplinary teams, conciliation of technical and socio-economic aspects.

The first part is devoted to the theoretical and practical learning of the various methods and tools. It allows students to be placed regularly in real life/ real work situations: case studies, collective field works, and applications.

The second part is dedicated to an individual work including a practical internship of at least 3 months leading to the writing and the defence of a Master's thesis or a research paper.

The training provides students with skills to work as research analysts in agricultural development organizations and among the actors of the agricultural production in the territories. This training also aims to teach economists, geographers and engineers how to work together by providing them the common language needed.

### MASTER 2 PROGRAMME (60 ECTS)

#### Prerequisites (September)

- Upgrade in economics (fundamentals in microeconomics, management, macroeconomics and statistics).
- Upgrade in agronomy.

#### Unit 1: Integrated and sustainable regional development for territories (September-February)

- Presentation of the connection between the urban planning actors and the implementation of the public action mechanisms, through territorial management tools.

#### Unit 2: Economics for rural development (September)

- Acquisition of the main tools used for general development and for rural territories development.

#### Unit 3: Diagnosis methods and tools (October)

- Learning rapid diagnosis methods applied to a rural area.
- Reading a rural territory using the concept and approach of vulnerability.
- Introduction to data analysis and Geographic Information Systems.

### ORGANIZATION

→ Master 2 (Baccalauréat +5 years)

Thirteen units 34 ECTS  
Training and report 26 ECTS

This training programme is organized by the CIHEAM-IAMM, in partnership with the UPVM3.

A training period in a professional environment, starting from mid-March is compulsory.

Depending on available seats, the course units can be followed as a short-duration course.

→ Master of Science of the CIHEAM (Baccalauréat +6 years)

Master of Science Thesis 60 ECTS

### LANGUAGE OF THE COURSES

French

### ADMISSION

Selection is based on qualifications and admission is decided by a Commission composed of representatives from the various institutions involved in the Master. This course is designed for economists, agronomists or geographers wishing to specialize in economy of rural development projects or in rural development in general.

The required level for admission is an engineer's degree or any equivalent level giving access to post-graduate studies. Prerequisites in economics are compulsory.

Tuition fees amount to 3 527 € (excluding registration fees, travel and living expenses) for applicants who are not coming from a CIHEAM member country.

The selection of candidates is based on the evaluation of the application documents: <http://candidature.iamm.fr/>. The deadline for receiving applications by post is 31 March 2020.

### DIPLOMAS

Master 2 awarded by the CIHEAM-IAMM and the UPVM3.

Master of Science of the CIHEAM

### SCHOLARSHIPS

It is possible for applicants coming from a CIHEAM member country to obtain scholarships covering living expenses and tuition fees.



#### Unit 4: Territorial diagnosis (October-November)

Socio-economic diagnosis applied to a rural territory after interviews with local actors and statistic surveys with growers.

#### Unit 5: Actors and natural resources management (1<sup>st</sup> part: November)

- Using of spatialized simulation models to support decision-making.
- The IWRM "GIRE" (Integrated Water Resource Management): irrigation techniques, control of inputs, water supply and demand management.
- Analysis of the interaction between individual and collective choices at the regional level.

#### Unit 6: International and national agricultural policies (December)

- Agricultural policies: history of national trajectories and methods of international coordination.
- Analysis of two policies: that of the European Union and that of the Green Morocco Plan.

#### Unit 7: Research workshop: Issues and Methods (January-February)

- Scientific construction of a research project.
- Analysis of a scientific article.
- Analysis of Master theses.

#### Unit 8: Farm management (January)

- To master farm firms management techniques using computer tools (technical and economical productions follow-up, work planning, funds and budget management, agricultural accountancy, environmental performance indicators).
- Agri-environmental measures and externalities management.
- To work out a strategic development plan for an agricultural firm using a multi-periodical simulator (Olympe) and create a model of counsel for management.
- Operational simulation studying a given area together with farmers and professional managers.

#### Unit 9: Modelling and support for decision-making (February)

- Mathematical modelling of a farm for decision-making.
- Simulation and optimisation models.
- Mathematical modelling examples: formulation and resolving of an optimisation model in an agricultural firm.
- Various methods of mathematical modelling of risk assessment.

- Comparison of the main models of bio-physical simulation.
- The CROPSYST model: vegetative growing modules, water, salt, nitrates, erosion.
- Construction of production functions, identification of the water needs of plants, scheduling based on need or on irrigation techniques.

#### Unit 10: Actors and natural resources management (2<sup>nd</sup> part: March)

- Economics applied to the environment and to natural resources.
- Environment policies implements: definition and implementation, taxes, quotas.
- Transfer of farms management models to regional incorporated models. Case studies: basic structures of a regional model, formulation, functioning, coherence of data, validation of models.
- Simulation of negotiation and collective choices evaluation in a small agricultural area/region.

#### Unit 11: Foreign language - English (October-March)

- Oral and written expression adapted to an academic and / or a professional context.

#### Unit 12: Documentary and bibliographic search tools (October-March)

- Master information-retrieval methods and tools
- Identify and assess the relevance, quality and validity of the collected information

#### Unit 13: Thematic research workshop and project elaboration (January-March)

- Formalize a research or master thesis project.
- Define the problematic, the working hypotheses and the methodological approach.

#### Internship report (March)

- Preparation of a project presenting the different aspects of the individual professional training period.

#### Individual training in a professional environment, presentation and defence of a M2 thesis (April-September)

This training takes place in firms involved in development, consulting firms, NGO, etc. Two students, with complementary skills, may jointly carry out studies focusing on the same project. This training period is followed by the presentation of a report, required to obtain the Master's Diploma.

## MASTER OF SCIENCE (60 ECTS)

### Master of Science of CIHEAM thesis

Preparation and defence.

#### Scientific coordinators:

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