

# SUMMER PROGRAMME

## *Sustainable Agriculture and Food Systems*

9 ECTS \*

5 weeks from beginning of June – Mid July

ISARA-Lyon is a specialized university offering courses on Agriculture, Food and Environmental Sciences. Our summer school is open to international undergraduates with a Science or Humanities major from beginning of June to mid-July. It is a comprehensive program of French language and culture lessons and scientific courses on Agroecology and Sustainable Agriculture in English, excursions, visits and hands-on learning opportunities.



Make the world your classroom. Perfect your intercultural skills while savoring the beauty Lyon and its surroundings has to offer. Student accommodation as well as ISARA-Lyon, are in the heart of town, enabling easy access and multiple opportunities to discover different facets of the city.

France's strong agrarian tradition together with its appreciation of fine food and wine makes it an ideal destination to learn how French and European agriculture is managed dealing with the many challenges facing the preservation of natural resources and sustainable food systems.

More information on our [website](#)  
or you could contact the coordinator: [sverneret@isara.fr](mailto:sverneret@isara.fr)

Total of ECTS	Contact hours						Project work
	Lectures	Tutorials	Practicals	Field trips / Excursions	Supervised work	Evaluation	Project work
ECTS : 9	39.50 h	-	9.00 h	35.00 h	18.50 h	6.50 h	15.00 h

Personal work = Contact hours x2

## Detailed courses and ECTS

Sustainable Agriculture and Food System (ISARA-Lyon) *	Aurélie FERRER	Lectures	Tutorials	Practicals	Field Trips	Supervised work	Evaluation	Project work
ECTS : 6		12.50 h	-	9.00 h	27.00 h	18.50 h	0.50 h	15.00 h

### OBJECTIVE :

The student is firstly put in a position to be able to understand :

- The stakes in agroecology in various contexts (large scale field crops, areas of dairy production, wetlands, Mediterranean areas)
- The different ways of thinking (ecological, agronomical and zootechnical) that make up the science of agroecology, and the transition to a transversal approach based on positive interactions
- The strategies behind different farming systems allowing the principles of agroecology to reach their full expression, thus enabling the student to understand the different conditions, agronomic, zootechnical, and socio-economic, necessary to achieve good agroecological performance
- The diversity of strategies available depending on the diversity of land conditions and use

Once these prerequisites have been acquired, the student is able to discuss:

- The capacity of a given farming system to successfully adopt agroecological principles
- The interactions between an evolving farming system and the chosen territory
- The social and economic forms of organisation that make agroecological practices easier to adopt
- Local, national and European policies

### PROGRAMME :

To reach the goal of developing sustainable agriculture, also questions around the valorization of biodiversity has become a major stake. ISARA-Lyon has got involved in research programs aiming to analyse this factors in taking into account different scales for agroecosystems analyses. This includes looking at cropping systems, livestock systems and extensive fish production systems in cultural landscapes, as elements interacting with natural components of ecosystems.

Our summer school will provide the keys to understand how biodiversity in agricultural landscapes can be supported in European environments made up of natural landscapes and human activities. First, the coursework puts special emphasis on case studies and field work. Then, personal investigation and lectures provide the necessary theoretical approaches and methods for agroecosystem diagnosis, by taking into account all the diverse components: ecological diagnosis, spatial analysis, cropping and livestock systems analyses, the economics and sociology of agroecological farming.

#### GENERAL INTRODUCTION AND PRESENTATION OF GUIDELINES (1 h lecture)

- Aurélie Ferrer

#### INTRODUCTION TO AGROECOLOGY (1 h lecture)

- Alexander Wezel

As different definitions, interpretations, and approaches exist today under the term agroecology an overview about this will be given to students. More specifically, the scientific approaches will be presented and discussed with the students, and an overview about agroecological practices will be given. In addition, to better understand the history and evolution of agroecology in the world some country examples will be presented.

## AGROECOLOGICAL PRACTICES FOR PEST CONTROL (1h lecture + 7h field trip + 1h practicals)

- Aurélie Ferrer



Pest management is a crucial challenge for sustainable agriculture. Based on agroecological management principles, several practices aim to improve crop pest control and could be combined, e.g. crop rotation, cultivar mixing, use of natural pesticides, push pull systems, biological control with conservation of pest natural enemies.

Biological control practices produce promising results especially in horticultural farms. The goal of the lecture and the field trip is to discover different agroecological infrastructures (e.g. landscape elements, “natural enemies production units”) and practices implemented by a market gardener on his farm to favor local population of natural enemies to protect his crops from pests. An insect field sampling at the end of the visit allow the students to better assess insect diversity on the farm especially diversity in natural enemies. This field trip is also an opportunity for students to meet and discuss with the farmer and to share and compare their experiences, knowledge about biological control practices in different parts of the world.

## FISH POND SYSTEMS IN AGRICULTURAL LANDSCAPSES (3h practicals + 8h field trip)

- Benoit Sarrazin

- Joël Robin

Fish pond systems, their characteristics and surrounding agricultural systems will be illustrated by a case study taken from the Dombes region close to Lyon.

The influence of pond fisheries and agricultural practices on biodiversity will be the center of attention during the visit, as well as methods of biodiversity evaluation through the presence of aquatic plants, dragonflies and amphibians.

The visit will be prepared using spatial analysis of land use data generated by remote sensing in a geographical information system (GIS). Ecological risk for fish ponds in agricultural landscapes will be assessed. This will constitute the case study:

- use of spatial analyses to locate pond exposed to agricultural nonpoint source pollution
- layout mapping to illustrate the analytical results.

The third dimension of the course involves a socio-economic approach with the analysis of the technical and socio-economic characteristics of farms and the study of local stakeholders and their implication in the conservation and management of pond biodiversity.

## INTEGRATED CROP-LIVESTOCK SYSTEM: case study in Provence (8h field trip + 1h pract. + 3h lecture)

- Emilie Ollion

What is an integrated crop-livestock system ? To discover the principles which shape this genuine agroecological farming system, students visit a farm in the hilly, sunny and colourful region of Provencal Pre-Alps. After the visit, they assess the costs and benefits of the interactions which design the whole system. Then they discuss the profitability of an integrated crop-livestock system. Futhermore, the farm also leads pastoral activities. The grazing intensity is a critical point in the management of rangelands in mountains and river banks. Fire defence, invasive plants control, biodiversity and the beauty of the landscape are at stake. The efficiency of the grazing period depends of many different factors. The effect of all those factors will be shown throughout the visit. Then teacher emphasizes the shrubs physiology and ecological wildlands dynamics under different grazing pattern.

## SOCIOLOGICAL & ECONOMIC ADAPTATION AT DIFFERENT SCALES (9h lecture + 4h field trip + 4h practicals)

Going organic in mountains: barriers and motivations, a sociological approach

- Jacques Godet - 4.5h lecture + 4h field trip

Organic farming is an alternative way actually widespread around Lyon. Our territory is well-known in France as a leading area, but this rise of organic farming occurred mainly in the lowlands whereas most of the Rhone-Alpes region is mountainous. It could be relevant to enhance conversion to organic farming in these highlands not only for their natural, ecological assets but also because there is a strong demand from the neighboring towns and resorts. Therefore we have to identify applicants among the local farmers and back them up - and prior to that, understand to which conditions they would convert and why they have been so few till now. An action-research launched 3 years ago in 3 mountainous areas provided us with some data to think about.

Protected Geographical Indications in France

- Céline Michaud - 4.5h lecture + 4h practicals

The French food system is characterized by numerous PGI. The purpose of this course is to introduce and discuss Protected Geographical Indications (PGI) on the basis of the various field studies conducted during the Summer School. French and foreign cases will be discussed. Basic tools and concepts used in social sciences to investigate PGI products will be presented.

Students will have to explore several PGI products with an analysis frame provided before the field visits. This frame will focus on the geographical area, the certification specificities, the local agricultural systems, the main actors involved, the attributes of the food product, the consumers targeted etc.

Students will then have to present the results of their studies in class. These results will be discussed with concepts of sociology and economy.

## SUPERVISED AND PROJECT WORK (33.5 h)

Each student must submit a bibliographical work on the subject that s/he will choose at the beginning of the summer school. The subjects are chosen from among the many related to the research topics of ISARA's Agroecological team.

### **TEACHING METHODS :**

Priority is given to an inductive approach to arouse curiosity and encourage critical thinking. Visits form the bedrock of the module. The lectures are designed to either introduce or consolidate knowledge. As consolidation, the lectures aim to give argument to the scientific foundations and foster new ways of thinking. Coursework is designed to help the student assess his/her appropriation of the knowledge during visits and to complete or revise particular points as necessary.

### **PREREQUISITES :**

The student must have a solid grounding in : ecology, agronomy, sociology

### **EVALUATIONS DETAILS:**

The student undertakes a work project throughout the module. This consists in building up the necessary areas of knowledge on a particular agroecological technique or territorial dynamic that fosters agroecological processes. The scheduled time allocated to this personal work will allow the student to carry out this project and prepare written and oral feedback. The written work should be between 5 and 7 pages long, although precise instructions are established directly with the teacher acting as personal tutor. The individual oral presentation is before a jury and should last about 15 minutes followed by 15 minutes of questions.

French language and culture (IPL)	Sigolène VERNERET	Lectures and Tutorials	Visits - Excursions	Evaluation
ECTS : 3		27.00 h	8.00 h	6.00 h

**OBJECTIVE :**

- improve your command of French as foreign language (speaking, listening and writing skills)
- understand French culture and share differences, similarities your own culture
- discover Rhône-Alps territories, economic and cultural activities

**PROGRAMME :**

- Classes of French as foreign language.

Students will be divided into 3 groups according to their knowledge in French:

**Beginner group:**

Students will learn basic knowledge that will help them in their daily life in Lyon:

How to introduce themselves, how to locate them, give an appointment, go to the market, understand a menu in a restaurant...

All sessions will have clear and precise language objectives adapted to the theme.

Some examples: verbs and tenses, negative form, adjectives, articles, vocabulary adapted to the theme, numbers, name of week days, months, foods...

**Intermediary group:**

Usually students have already good knowledge in French but sometimes they are lacking of practices.

This prevents them from using as much as they can their knowledge. This course will help them to feel more comfortable, deepening and enlarging their knowledge already existing.

Work will be writing and speaking in order to improve both skills.

According to the number of students, their knowledge, background but also origin... themes will be defined. On each theme, the French teacher will be able to work on vocabulary, grammar, syntax, cultural aspect (writing and speaking skills).

Since students in this group have already good knowledge, the priority will be given to develop communication on their personal point of view.

Not to mention that the group will be composed of students from different nationalities, it will be then interesting to share themes with an intercultural vision and compare it to the French culture.

**Advanced group:**

Students in this group have a very good command of French (speaking, understanding and writing).

They have no difficulties to understand what is said and to express themselves. The aim of this course is to help them to go deeper and perfect their knowledge. The objective is also to focus on the need of each student and help him to improve on a particular need.

As for the intermediary group, the French teacher will develop themes according to the dynamic of the group and will be able to work on vocabulary, grammar, syntax, cultural aspect (writing and speaking skills).

Along with the French courses, you will be visiting various places in the Rhône-Alps region, such as:

- o Lyon, UNESCO World Heritage, Pérouges Medieval City, Annecy...
- o Vineyards
- o Chocolate factory
- o Cheese makers in the Alps
- o Regional companies and industries: textile industries, CERN (European Centre for Nuclear Research), etc.

**TEACHING METHODS :**

- Lectures
- Visits

**EVALUATIONS DETAILS:**

- Continuous evaluation and final exam

