UP : S9-SDFI	ISARA5 / S9	Numbers of student hours						
Sustainable development in food industries	GHNIMI Sami	**Lectures**	**Tutorials**	**Practicals**	**Field trips**	**Supervised work**	**Project work**	**Evaluation**
ECTS : 30		**113.50 h**	**80.50 h**	**19.00 h**	**60.00 h**	**79.50 h**	**143.00 h**	**8.25 h**

OBJECTIVES :

- acquire a clear vision of the challenges at stake in the companies and organizations of the food sector.
- be able to manage teams and develop innovative and sustainable organizations.
- acquire a systemic approach of the organizations and the food chain
- know how to manage professional activities in a sustainable way taking into account the whole market and the various stakeholders.

TEACHING METHODS:

The semester is entirely taught in English.
It includes 3 teaching units:
UE1: Food processing and managerial innovation
UE2 : Intrapreneurship and sustainable development in food industries
UE3: Literature review

UE : S9-FPMI	ISARA5 / S9	Numbers of student hours						
Food processing and managerial innovation *	Sami GHNIMI	Lectures 63.50 h	Tutorials 19.00 h	Practicals 56.00 h	Field trips 56.00 h	Supervised work 22.50 h	Project work 8.00 h	Evaluation 3.25 h
ECTS : **12**								

OBJECTIVES:

This course gives an overview of the holistic approach in sustainable food processing via the consideration of the total value chain. Food production and management tools, food quality systems, occupational health, food crisis management and life cycle assessment will be introduced. The course consists of formal lectures, projects, tutorials, practical classes in the food pilot plant.

Upon the completion of the course, the students will be able to:
- Acquire creativity skills and problem-solving tools
- Understand food production and its context
- Manage teams and organizations in an international context and from the perspective of continuous improvement

PROGRAMME:

Part 1: Management tools and creativity in food manufacturing
- Problem solving
- Computing tools and techniques used in food production
- Approach to eco-conception : life cycle assessment

Part 2: Management in production environment
- Lean management in food manufacturing
- Production and manufacturing management
- Management and industrial strategies
- Management of investment
- Food value chain : Dairy case study

Part 3 : Quality, health and safety
- Food quality systems
- Occupational health
- Food crisis management

PREREQUISITES:

A Bachelor in Life Sciences with knowledge in the following fields: physics, chemistry, biochemistry, chemical or food processes, notions of economics. Students with a background in nutrition, food/agricultural marketing, agriculture are also enrolled.

TEACHING METHODS:

The course consists of formal lectures, tutorials, entrepreneurship project, practical classes in the food pilot plant and also field trips to French food companies. The food pilot plant offers a range of food technologies for process development and upscaling. During the practical classes, students have to optimize production parameters on a real production trial. During the study tour, students explore the challenges and efforts devoted to sustainable development in 5 agro-food companies with different scales. Students have also to write a review paper on a specific topic related to sustainability in the food chain.

EVALUATION METHODS:

Exams:
- written report on a case study : 25%
- Practical lab: oral presentations - 35%
-Written exam : 40%

UE : S9-ISDFP	ISARA5 / S9	Numbers of student hours						
Intrepreneurship and sustainable development in food industries *	Sami GHNIMI	Lectures 47.00 h	Tutorials -	Practicals 4.00 h	Field trips 4.00 h	Supervised work 57.00 h	Project work 119.00 h	Evaluation 5.00 h
ECTS : **12**								

OBJECTIVES:

This course focuses on the strategic management and efficiency of food industries, assessment tools and challenges of sustainable development in agro-food sector. The course consists of formal lectures, core projects with food companies and tutorials.

Upon the completion of the course, the students will be able to:
- Understand the stakes of sustainable development and apply them to the food company's strategy
- Analyze the sustainability of the food chain in an international context.
- Be a creative force and a proactive / leading stakeholder in his/her organization (intrapreneurship)
- Design, implement and assess development projects
- Understand and implement the strategic management items at various levels of the organization, and translate them into operational action plans.

PROGRAMME:

Course Content
1. Pillars of sustainable development
- Sustainability pillars : environment, social and economic
- Assessing business profiles
2. Managing sustainable food operations
- Packaging challenges and opportunities for sustainability; including ISO 18601 requirements
- sustainable food consumption
- Waste management
- Energy and ISO 50001 requirements
- Supply chain flow management
- Controlling and financial management
3. Leadership and sustainability
- Management tools
- Negotiation skills

PREREQUISITES:

A Bachelor in Life Sciences with knowledge in the following fields: physics, chemistry, biochemistry, chemical or food processes, notions of economics. Students with a background in nutrition, food/agricultural marketing, agriculture are also enrolled.

TEACHING METHODS:

The course consists of formal lectures, core projects with food companies and meetings within groups lo learn essential strategies and skills for successful negotiation. Students are instructed to work on groups to enhance the team-based learning which is a valuable stepping stone towards future integration of food companies or organizations. In the negotiation meetings, each student plays a role in a ‘negotiation’ scenario (board of directors in a company) to highlight their negotiation skills and qualities. The core project work, assigned to individual team, provides real life example / issue where students do interact with food companies to explore and develop relevant solutions.

EVALUATION METHODS:

- Core project with food companies (report and oral presentation) : 70%
- Negotiation meetings : 30%

UE : S9-ET-PRO	ISARA5 / S9	Numbers of student hours						
Literature review *	Sami GHNIMI	Lectures 3.00 h	Tutorials -	Practicals -	Field trips -	Supervised work -	Project work 16.00 h	Evaluation -
ECTS : **6**								

OBJECTIVES:

Après avoir suivi ce module avec succès, vous serez en mesure de :

- Apprendre à sélectionner judicieusement les études et à rapporter leurs résultats en fonction de leur pertinence.
- évaluer les forces et les faiblesses de différentes études
- Comparer et opposer les résultats de diverses études.
- Faire preuve de compétences critiques avancées pour rechercher, analyser et synthétiser des documents, problèmes, concepts et théories complexes en lien avec la durabilité des systèmes alimentaires
- Rédiger un rapport de synthèse d'une longueur considérable (4000 mots minimum).
- Présenter oralement les principaux résultats de la revue de littérature

PROGRAMME:

- Présentation des directives pour une revue de littérature réussie
- choix des thématiques à explorer en lien avec la durabilité des systèmes alimentaires durables
- Rendu du rapport écrit + présentation orale de 30 min/groupe

PREREQUISITES:

A Bachelor in Life Sciences with knowledge in the following fields: physics, chemistry, biochemistry, chemical or food processes, notions of economics. Students with a background in nutrition, food/agricultural marketing, agriculture are also enrolled.

TEACHING METHODS:

Le module se compose d'une présentation des directives pour une revue de littérature réussie.Ensuite, des réunions au sein des groupes sont organisées pour apprendre les stratégies et les compétences essentielles pour chercher, analyser et collecter les information à partir des études. Les étudiants sont également invités à travailler en groupe pour renforcer l'apprentissage en équipe, ce qui constitue un tremplin précieux pour l'intégration future d'entreprises. Les étudiants doivent rédiger un article de synthèse sur le sujet spécifique lié à la durabilité dans la chaîne alimentaire. Une présentation orale de 30min/groupe est également organisée pour partager les résultats de leur recherche aux autres groupes d'étudiants

EVALUATION METHODS:

UE : S9- ENTR3	ISARA5 / S9	Numbers of student hours						
In-company assignment	Jean-Paul MALLEVAL	Lectures -	Tutorials -	Practicals -	Field trips -	Supervised work -	Project work -	Evaluation -
ECTS : **6**								

OBJECTIVES:

PROGRAMME:

PREREQUISITES:

TEACHING METHODS:

EVALUATION METHODS: