Livret de formation

Dominante Sufficient

Programme 2024 - 2025

Programme

SEMESTRE 9

Dominante Sufficient			
Unité d'enseignement	Module	Heures étudiant	Coefficient
ING3A-S9-TC-UE14 - UE14-PROJETS D'INGENIEUR - ETAPE C	Projets d'ingénieur-phase C : conduite d'un projet de la formulation de la commande au délivrable	140	9
code2015 - UE15-TRONC COMMUN-SUF	Technical & Scientific Aspect of the Formulation	58	6
	Sustainable aspect of food	49	4
	Project Management in R&D and creativity	21	2
	Marketing	12	1
	Food safety evaluation & conformity of food with the European standard & regulation	10	1
	Oral communication skills	7	2
	Autonomous work and written communication skills	44	0
	Total	**341**	

Dominante Sufficient - Dominante Sufficient
SEMESTRE 9

ING3A-S9-TC-UE14 : UE14-PROJETS D'INGENIEUR - ETAPE C
Module Obligatoire

Parc-ING3A-S9-TC-UE14

Projets d'ingénieur-phase C : conduite d'un projet de la formulation de la commande au délivrable

Nb heures / étudiant	140				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	-	-	-	-	-
Nb groupes	-	-	-	-	-

Enseignants responsables	Eric FERRET
Département/UPé	
Compétences	
Objectifs Developpement Durable	Module ressource, non concerné

Objectifs du module	Propre à chaque dominante. Voir livret de dominante.
Objectifs d'apprentissage	
Pré-requis	
Contenu	A titre d'exemple, les projets C des années précédantes ont porté sur:

Évaluations	CC : compte-rendu ou rapport écrit en groupe	CC : oral en groupe
Coefficient	1	1

ING3A-S9-TC-UE14-SUF-M01

Projets d'ingénieur-phase C : conduite d'un projet de la formulation de la commande au délivrable

Nb heures / étudiant	140				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	-	-	-	-	-
Nb groupes	-	-	-	-	-

Enseignants responsables	Camille LOUPIAC, Philippe CAYOT, Celine LAFARGE
Département/UPé	UPE CHIMIE, PHYSICO-CHIMIE ET FORMULATION
Compétences	Réaliser un diagnostic, Conseiller et former, Conduire des projets innovants, Gérer des projets
Objectifs Developpement Durable	Consommation et production responsables

Objectifs du module	Project C: From a formulation of a food to the delivery of a model or prototype for an industrial partner. SUFFICIENT is a specialization course focused on food formulation at the end of the food engineer program (master degree) of Institut Agro Dijon. SUFFICIENT means Sustainable Foof Formulation: Innovation Choice of Ingredients for Energy saving, Nutrition quality, Trade challenges. The course SUFFICIENT aims to give you all the skills to formulate or reformulate a food in an industrial context. The SUFFICIENT course is based on the management of a project, mainly with an industrial partner. You will be able to explain the choice of your product and formula, and the objective you have fixed using the data you obtained during the product benchmarking study. You will be able to explain the reason of the experiments you have done, based on the deep scientific and technic state of art. You will be able to explain your scientific choices, specify your methods and materials. You will be able to purpose a formula of a food considering sustainability aspects (environment and socio economic), nutritional aspects, to produce a written report. You develop skills to offer major decision-making tools and advices to you industrial partner, in order to help the company to continue or stop the project.
Objectifs d'apprentissage	
Pré-requis	Your are supposed to have in - depth konwledges in food chemistry and food physical chemistry, sensory evaluation and nutrition. You need to have been already sensitized to the issue of food safety (microbiology, toxicology), food processes, fermentation processes. You supposed to work in a lab. of chemistry or physical chemistry, handle chemicals, to have expertise in chemical experiments, used rheology instruments and lead a sensory evaluation. You normally know how to find informations, obtained knoweldges you need to solve a technical problem, an issue, or to carry out a research project. You should be able to analyse the bibliography and web sources, to exploit the informations you get and to use these informations. You have to self-learning skills.
Contenu	

Évaluations	CC : mise en situation pratique en groupe
Coefficient	9

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code2015 : UE15-TRONC COMMUN-SUF
Module Obligatoire

ING3A-S9-UE15-SUF-M01

Technical & Scientific Aspect of the Formulation

Nb heures / étudiant	58				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	33	15	10	-	-
Nb groupes	1	2	2	-	-

Enseignants responsables	Philippe CAYOT, Camille LOUPIAC, Celine LAFARGE
Département/UPé	UPE CHIMIE, PHYSICO-CHIMIE ET FORMULATION
Compétences	Réaliser un diagnostic, Conduire des projets innovants
Objectifs Developpement Durable	Consommation et production responsables, Infrastructure résiliente, Industrialisation durable et Innovation, Accès à la santé, Lutte contre la faim

Intervenants Internes	Philippe CAYOT, Aurelie LAGORCE, Helene LABOURE, Dominique CHAMPION, Gaelle ARVISENET, Virginie DANTEN

Objectifs du module	Acquire the technical and scientific skills of formulation
Objectifs d'apprentissage	Mainly Hard skills: - use chemistry to analyze the formulation over a simple list of ingredients and additives but as a sum of molecules that can react during processes and storage - understand the structuration during processes and the evolution of structures during storage using the fundamental bases of physicochemistry - select the best tools for sensory analysis
Pré-requis	The module requires high-level scientific skills, especially in Food Chemistry, Food Physicochemistry, and Sensory Sciences (knowledge & knowhow in the three bases disciplinaries of food formulation).
Contenu	- Optimization - experimental plan - Input of sensory evaluation (sensory and/or consumer approaches) on product development and innovation - Sustainable food system: consumer representation, attitude, expectation - Fizz software (sensory evaluation records & treatments) - Preference mapping and food product development - Penalty analysis food product development - Multivariate statistical analysis applied to sensory evaluation - Chemistry & physico-chemistry of aroma - Physico-chemistry of projects - Professional conferences (generally ingredients producers) - Deformulation excercices and Formulation Strategy - Support for autonomous works of students in project C: support in chemistry - Support for autonomous works of students in project C: support in sensory

Évaluations	CT : écrit individuel	CC : compte-rendu ou rapport écrit en groupe
Coefficient	4.5	1.5

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code2015 : UE15-TRONC COMMUN-SUF
Module Obligatoire

ING3A-S9-UE15-SUF-M02

Sustainable aspect of food

Nb heures / étudiant	49				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	21	8	20	-	-
Nb groupes	1	2	2	-	-

Enseignants responsables	Celine LAFARGE, Camille LOUPIAC, Philippe CAYOT
Département/UPé	UPE CHIMIE, PHYSICO-CHIMIE ET FORMULATION
Compétences	Réaliser un diagnostic, Gérer des projets, Conseiller et former, Conduire des projets innovants, Mettre en oeuvre une communication participative
Objectifs Developpement Durable	Infrastructure résiliente, Industrialisation durable et Innovation, Consommation et production responsables, Villes et communautés durables, Lutte contre le changement climatique

Intervenants Internes	Helene GERARD-SIMONIN, Camille LOUPIAC, Philippe CAYOT, Aurelie LAGORCE, Remi SAUREL, Emmanuelle RICAUD ONETO

Objectifs du module	Take into account the constraints of sustainability in the formulation of a food
Objectifs d'apprentissage	To be able to calculate environmental impacts (endpoints) and choose some midpoints in order to communicate and change practices or formulation in order to decrease the environmental impacts To be able to manage environmental scores such as EcoScore
Pré-requis	The module requires high-level scientific skills, especially in Food Chemistry, Food Physicochemistry and Sensory Sciences (knowledge & knowhow in the 3 basics disciplinaries of food formulation).
Contenu	- Calculation of enviromental impact ; use of the soft "SimaProS" to analyze Life Cycle Assessment (LCA), (ISO 14040) - Economical sustainability - Zero waste strategy - Product life cycle (environmental suistability) & ecodesign - Food wastage - Sharing of expertise between a chef and the technological approaches developed by students in the laboratory - Uses of vegetable proteins in dairy analogues - Use of polyosides as a solution to compensate the functional properties weaknesses of plant proteins - Use vegetable proteins (& novel proteins) to replace animal proteins

Évaluations	CC : oral en groupe	CC : mise en situation pratique en groupe	CC : oral en groupe
Coefficient	1	2	1

Dominante Sufficient - Dominante Sufficient
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code2015 : UE15-TRONC COMMUN-SUF
Module Obligatoire

ING3A-S9-UE15-SUF-M03

Project Management in R&D and creativity

Nb heures / étudiant	21				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	6	15	-	-	-
Nb groupes	1	2	-	-	-

Enseignants responsables	Philippe CAYOT, Camille LOUPIAC, Celine LAFARGE
Département/UPé	UPE CHIMIE, PHYSICO-CHIMIE ET FORMULATION
Compétences	Gérer des projets, Conduire des projets innovants
Objectifs Developpement Durable	Infrastructure résiliente, Industrialisation durable et Innovation

Intervenants Internes	Philippe CAYOT, Jerome AUBERT, Camille LOUPIAC

Objectifs du module	Acquire skills in R&D project management and innovation management
Objectifs d'apprentissage	* able to establish a retroplanning, to manage cost of project * able to lead innovative projects
Pré-requis	
Contenu	- Global project management connected to the C project - Collective intelligence (Belbin's techniques for setting up working groups) - Creativity management (theory & practice in 3-day seminar) - Work Planning (retroplaning with GANTT, full description of all tasks by WBS, RBS and OBS) and the keeping of the laboratory notebook - Costs of project

Évaluations	CC : oral en groupe	CC : mise en situation pratique en groupe
Coefficient	1	1

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code2015 : UE15-TRONC COMMUN-SUF
Module Obligatoire

ING3A-S9-UE15-SUF-M04

Marketing

Nb heures / étudiant	12				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	12	-	-	-	-
Nb groupes	1	-	-	-	-

Enseignants responsables	Camille LOUPIAC, Celine LAFARGE, Philippe CAYOT
Département/UPé	UPE CHIMIE, PHYSICO-CHIMIE ET FORMULATION
Compétences	Réaliser un diagnostic, Gérer des projets, Conduire des projets innovants
Objectifs Developpement Durable	Consommation et production responsables

Intervenants Internes	Monia SAIDI

Objectifs du module	Master the basics of food marketing
Objectifs d'apprentissage	- Know how to establish specifications based on marketing expectations - Have the reflex to study the competition before launching any R&D or innovation project
Pré-requis	Notions of marketing (done in AgroSup Dijon in semester S7)
Contenu	- Product Benchmarking (in relation with the C project, UE14) - Global marketing vision of products, and espacially value proposition canvas - Marketing specific B to B - Strategic marketing - Operationnel marketing

Évaluations	CC : compte-rendu ou rapport écrit en groupe	CC : oral en groupe
Coefficient	0.8	0.2

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code2015 : UE15-TRONC COMMUN-SUF
Module Obligatoire

ING3A-S9-UE15-SUF-M05

Food safety evaluation & conformity of food with the European standard & regulation

Nb heures / étudiant	10				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	3	-	7	-	-
Nb groupes	1	-	2	-	-

Enseignants responsables	Camille LOUPIAC, Philippe CAYOT, Celine LAFARGE
Département/UPé	UPE CHIMIE, PHYSICO-CHIMIE ET FORMULATION
Compétences	Réaliser un diagnostic, Conduire des projets innovants
Objectifs Developpement Durable	Consommation et production responsables

Intervenants Internes	Marie Christine CHAGNON, Isabelle SEVERIN

Objectifs du module	Food safety evaluation & conformity of food with the European standard & regulation
Objectifs d'apprentissage	To manage : - risk assesment tools and compliance with regulations - innovation strategy and safety constraint (novel food regulation)
Pré-requis	Basic knowlegde about toxicology
Contenu	

Évaluations	CC : oral en groupe
Coefficient	1

Dominante Sufficient - Dominante Sufficient
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code2015 : UE15-TRONC COMMUN-SUF
Module Obligatoire

ING3A-S9-UE15-SUF-M06

Oral communication skills

Nb heures / étudiant	7				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	-	7	-	-	-
Nb groupes	-	1	-	-	-

Enseignants responsables	Celine LAFARGE, Philippe CAYOT, Camille LOUPIAC
Département/UPé	UPE CHIMIE, PHYSICO-CHIMIE ET FORMULATION
Compétences	Mettre en oeuvre une communication participative
Objectifs Developpement Durable	Module ressource, non concerné, Accès à une éducation de qualité, Réduction des inégalités

Intervenants Internes	Philippe CAYOT, Camille LOUPIAC

Objectifs du module	Apply a cumulative public speaking skills to project C professional requirements
Objectifs d'apprentissage	Can effectively communicate, justify, and clarify in english informations pertaning to informations to different steps of the project C
Pré-requis	To already have done an oral defense of project management (about scientific overview, pratical results, scientific trainee) (B project in Agrosupdijon for instance)
Contenu	Oral communication skills applied to project C: GANTT, benchmark & deformulation of competitors, science & technical state of art, Life Cycle Assessment - LCA -, and final oral presentations

Évaluations	CC : oral en groupe
Coefficient	2

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code2015 : UE15-TRONC COMMUN-SUF
Module Obligatoire

ING3A-S9-UE15-SUF-M07

Autonomous work and written communication skills

Nb heures / étudiant	44				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	-	-	44	-	-
Nb groupes	-	-	2	-	-

Enseignants responsables	Camille LOUPIAC, Celine LAFARGE, Philippe CAYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	Gérer des projets, Conduire des projets innovants, Mettre en oeuvre une communication participative, Encadrer une équipe
Objectifs Developpement Durable	Accès à des emplois décents, Module ressource, non concerné

Intervenants Internes	Helene GERARD-SIMONIN, Monia SAIDI, Camille LOUPIAC, Helene LABOURE, Philippe CAYOT, Jerome AUBERT

Objectifs du module	Complete the empowerment and professionalization before leaving for an engineering internship (end of training cycle)
Objectifs d'apprentissage	Work in team Prepare an oral defense Write a synthetic and precise report Establish a skill portfolio
Pré-requis	To already have done and written a report of project management (about scientific overview, pratical results, scientific trainee) A & B project (in Agrosupdijon for instance)
Contenu	In connection with C project defenses (connection with UE14), write efficient activity reports. Production of 4 reports about GANTT, benchmark analysis, science & technical state of art, and the complete final report send to the industrial partner.

Évaluations	-
Coefficient	-