Livret de formation

Master 1 - MP2

Microbiology and Physicochemistry for food and wine processes

Programme 2024 - 2025

Programme

SEMESTRE 1

Microbiologie et physicochimie pour les procédés alimentaires et viticoles			
Unité d'enseignement	Module	Heures étudiant	Coefficient
D-M1MP2-P2FOOD-S1-TC-UE01 - Toolbox	Team building and intercultural communication	16	0
	Computing tools	6	1
	bibliographical research and analysis of scientific articles	8	1
	Discovering the local research environment, visiting laboratories	9	0
D-M1MP2-P2FOOD-S1-TC-UE02 - Statistics	Descriptive and non-parametric statistics	20	2
	Parametric statistics Introduction to multivariate statistics	24	2
D-M1MP2-S1-AA-UE03 - Introduction to sensory evaluation	Discriminative testing, evaluation of a simple sensory variable and introduction to sensory profile	13	1
	Hedonic and Just-about Right tests	11	2
D-M1MP2-S1-AA-UE04 - Food composition and nutrition	Food ingredients, structure and analysis	24	3
D-M1MP2-S1-AA-UE05 - Fundamentals of food microbiological risks and processes	Basis in food microbiology : food hygiene and pathogenic micro-organisms	9	3
	Basis in food microbial processes: data analysis and bioreactor	11	3
D-M1MP2-S1-AA-UE06 - Food Chemistry and Physico chemistry	Basis in food physics	30	7
	Basis in Wine chemistry	20	5
D-M1MP2-S1-AA-UE07 - Microbiology and Microbiological Processses	Microbiology and Microbiological Processses	40	6
	Total	**241**	

D-M1MP2-P2FOOD-S1-TC-UE01 : Toolbox
Module Obligatoire

D-M1MP2-P2FOOD-S1-TC-UE01-M01

Team building and intercultural communication

Nb heures / étudiant	16				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	-	16	-	-	-
Nb groupes	-	1	-	-	-

Enseignants responsables	Gaelle ARVISENET, Stephane GUYOT, Elias BOU MAROUN
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	
Objectifs Developpement Durable	Module ressource, non concerné

Objectifs du module	- Become familiar with the university studies in France and the field of studies - Control speech and discourse coherence. - Achieve systematic harmonious oral practice using English language - Express an opinion, facilitate a meeting, become familiar with talks and participate in a scientific conversation
Objectifs d'apprentissage	
Pré-requis	Language Requirements: the language of instruction for master's programs offered by Agrosup Dijon is English. Candidates must demonstrate proficiency in English by submitting standardized English language test scores. The following tests will be requested as a certification of the required English level : CECRL: level B2 minimum TOEFL: 87 points minimum TOEIC: 785 points minimum BULATS: 60 points minimum First Certificate English of Cambridge Bright Language Test: level 3 minimum IELTS : Level 6 minimum Candidates whose mother language isEnglish are normally exempt from this requirement.
Contenu	

Évaluations	CC : attestation de présence
Coefficient	-

D-M1MP2-P2FOOD-S1-TC-UE01 : Toolbox
Module Obligatoire

D-M1MP2-P2FOOD-S1-TC-UE01-M02

Computing tools

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

Enseignants responsables	Gaelle ARVISENET, Stephane GUYOT, Elias BOU MAROUN
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Intervenants Internes	Ludovic JOURNAUX, Pierre-Yves LOUIS, Laurence DUJOURDY

Objectifs du module	discovering or improving knowledg of computing tools required for several units of the M1
Objectifs d'apprentissage	Become more comfortable using spreadsheets and statistical software
Pré-requis	
Contenu	

Évaluations	Contrôle Continu par groupe
Coefficient	1

D-M1MP2-P2FOOD-S1-TC-UE01 : Toolbox
Module Obligatoire

D-M1MP2-P2FOOD-S1-TC-UE01-M03

bibliographical research and analysis of scientific articles

Nb heures / étudiant	8				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	2	6	-	-	-
Nb groupes	1	1	-	-	-

Enseignants responsables	Gaelle ARVISENET, Elias BOU MAROUN, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	
Objectifs Developpement Durable	Module ressource, non concerné

Objectifs du module	Familiarize students with the tools of scientific literature
Objectifs d'apprentissage	use a reference manager Read a scientific paper Write a structured abstract
Pré-requis	
Contenu	use a reference manager Read a scientific paper Write a structured abstract

Évaluations	CC : écrit individuel
Coefficient	1

D-M1MP2-P2FOOD-S1-TC-UE01 : Toolbox
Module Obligatoire

D-M1MP2-P2FOOD-S1-TC-UE01-M04

Discovering the local research environment, visiting laboratories

Nb heures / étudiant	9				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	4	-	-	-	5
Nb groupes	1	-	-	-	1

Enseignants responsables	Elias BOU MAROUN, Stephane GUYOT, Gaelle ARVISENET
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Objectifs du module	Students iwill discover Research will visit the main local research lab in their field (CSGA or PAM)
Objectifs d'apprentissage	Meet researchers and doctoral students, understand the research themes for which the Master's degree prepares you, and identify the different ways in which you can enter a career in research after graduating.
Pré-requis	
Contenu	Laboratory visits and short presentations of research projects

Évaluations	CC : attestation de présence
Coefficient	-

D-M1MP2-P2FOOD-S1-TC-UE02 : Statistics
Module Obligatoire

D-M1MP2-P2FOOD-S1-TC-UE02-M01

Descriptive and non-parametric statistics

Nb heures / étudiant	20				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	8	-	12	-	-
Nb groupes	1	-	0.5	-	-

Enseignants responsables	Laurence DUJOURDY, Stephane GUYOT, Elias BOU MAROUN
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Intervenants Internes	Walid HORRIGUE, Pierre-Yves LOUIS, Ludovic JOURNAUX

Objectifs du module	In this Unit, students will learn to carry out the statistical analyses needed to properly analyze the different data usually collected when studying consumers' choices and behavior.
Objectifs d'apprentissage	Students will learn the different statistical tests and how to choose a test according to the nature of the dataset they need to analyze. They will apply the statistical tests with Excel, R with GUI Jamovi, and R with RStudio
Pré-requis	
Contenu	- Descriptive statistics, graphs, - Uni variate statistics - confidence intervals, estimation - Classical hypotheses tests: Student, Fisher, Rank tests,

Évaluations	CC : oral en groupe
Coefficient	2

D-M1MP2-P2FOOD-S1-TC-UE02 : Statistics
Module Obligatoire

D-M1MP2-P2FOOD-S1-TC-UE02-M02

Parametric statistics Introduction to multivariate statistics

Nb heures / étudiant	24				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	12	12	-	-	-
Nb groupes	1	1	-	-	-

Enseignants responsables	Walid HORRIGUE, Elias BOU MAROUN, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Intervenants Internes	Pierre-Yves LOUIS

Objectifs du module	In this Unit, students will learn to carry out the statistical analyses needed to properly analyze the different data usually collected when studying consumers' choices and behavior.
Objectifs d'apprentissage	Students will learn the different statistical tests and how to choose a test according to the nature of the dataset they need to analyze. They will apply the statistical tests with Excel, R with GUI Jamovi, and R with RStudio
Pré-requis	
Contenu	- One-way ANOVA, tests post-hoc, Kruskal-Wallis - Multi-way ANOVA - Introduction to multivariate analysis

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

D-M1MP2-S1-AA-UE03 : Introduction to sensory evaluation
Module Obligatoire

D-M1MP2-P2FOOD-S1-TC-UE03-M01

Discriminative testing, evaluation of a simple sensory variable and introduction to sensory profile

Nb heures / étudiant	13				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	4	-	9	-	-
Nb groupes	1	-	-	-	-

Enseignants responsables	Gaelle ARVISENET, Elias BOU MAROUN, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Intervenants Internes	Helene LABOURE, Virginie DANTEN

Objectifs du module	This course will provide students with an introduction to sensory evaluation applied to product development.
Objectifs - d'apprentissage	1) acquiring an understanding of sensory evaluation methodologies and their application to food development; 2) identify the components of a good sensory tests protocol, understanding the importance of a properly writing of protocols 3) interpret the results of discriminative sensory tests, analyse an attribute difference test
Pré-requis	Statistics (Unit2)
Contenu	**What is sensory evaluation** and why using it in sensory evaluation? - **Discrimination tests (**triangle test, 2AFC, 3 AFC, 2 out of 5, Tetrad) Principle, preparation of a test, data collection, data analysis & interpretation, report writing Attribute difference test: data analysis

Évaluations	CT : écrit individuel
Coefficient	1

D-M1MP2-S1-AA-UE03 : Introduction to sensory evaluation
Module Obligatoire

D-M1MP2-P2FOOD-S1-TC-UE03-M02

Hedonic and Just-about Right tests

Nb heures / étudiant	11				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	3	8	-	-	-
Nb groupes	1	1	-	-	-

Enseignants responsables	Gaelle ARVISENET, Helene LABOURE, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Intervenants Internes	Virginie DANTEN

Objectifs du module	Acquiring an understanding of sensory evaluation methodologies based on hedonic response, and their application to food development;
Objectifs d'apprentissage	Carry out an hedonic test choose a statistical test according to the nature of the dataset to be analyzed Analyse the results, write a report
Pré-requis	Module "Discriminative testing, evaluation of a simple sensory variable and introduction to sensory profile " of the same Unit
Contenu	Consumer tests: protocol, data collection, analysis, writting of a report JAR test; data analysis & interpretation

Évaluations	CC : compte-rendu ou rapport écrit en groupe	CT : Évaluation par le tuteur
Coefficient	1	1

D-M1MP2-S1-AA-UE04 : Food composition and nutrition
Module Obligatoire

D-M1MP2-S1-AA-UE04-M01

Food ingredients, structure and analysis

Nb heures / étudiant	24				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	12	-	12	-	-
Nb groupes	1	-	1	-	-

Enseignants responsables	Gaelle ARVISENET, Elias BOU MAROUN, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	
Objectifs Developpement Durable	Module ressource, non concerné

Intervenants Internes	Camille LOUPIAC

Objectifs du module	Acquire basic knowledge of the structure of food ingredients (proteins, lipids, sugars, other molecules such as vitamins-pigments-minerals) and the means and principles of analysis methods.
Objectifs d'apprentissage	
Pré-requis	
Contenu	- Lectures: Proteins. Polysaccharides. Lipids. Antioxydants.Vitamins. Minerals. - Practicals: Proteins. Polysaccharides. Lipids. Antioxydants.Vitamins. Minerals.

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

D-M1MP2-S1-AA-UE05 : Fundamentals of food microbiological risks and processes
Module Obligatoire

D-M1MP2-S1-AA-UE05-M01

Basis in food microbiology : food hygiene and pathogenic micro-organisms

Nb heures / étudiant	9				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	4	5	-	-	-
Nb groupes	1	1	-	-	-

Enseignants responsables	Elias BOU MAROUN, Stephane GUYOT, Gaelle ARVISENET
Département/UPé	AGRONOMIE, AGROEQUIPEMENTS, ELEVAGE, ENVIRONNEMENT
Compétences	
Objectifs Developpement Durable	Consommation et production responsables, Lutte contre le changement climatique

Objectifs du module	The objective of these courses is to provide a basic knowledge of food microbiology. The course provides an overview of microorganisms of interest (as ferments and probiotics) and undesirable microorganisms (as foodborne pathogens and alteration flora) in the food industry. Special attention will be given to hygiene in food production. A focus on energetic metabolism will be done to allow students to well understand how environmental conditions such as absence/presence of oxygen affect the behavior of microorganisms.
Objectifs d'apprentissage	-Identification of microorganisms of interest -Identification of foodborne pathogens and alteration flora with special attention to pathogen/food matrix combinations -Knowledge of bacterial energy metabolism -Knowledge of hygiene rules for the management of microbiological risk in food
Pré-requis	Basic knowledge of cell biology: Definition of a cell
Contenu	Introduction to cell biology with a focus on food microbiology by the means of courses and a oral presentation (student groups)

Évaluations	CT : écrit individuel	CC : oral en groupe
Coefficient	2	1

D-M1MP2-S1-AA-UE05 : Fundamentals of food microbiological risks and processes
Module Obligatoire

D-M1MP2-S1-AA-UE05-M02

Basis in food microbial processes: data analysis and bioreactor

Nb heures / étudiant	11				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	5	6	-	-	-
Nb groupes	1	1	-	-	-

Enseignants responsables	Gaelle ARVISENET, Elias BOU MAROUN, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	
Objectifs Developpement Durable	Consommation et production responsables

Objectifs du module	The objective of these courses is to learn the main characteristics of microbial growth in appropriate bioreactors (as fermentors). The course is mainly related to the analysis of bacterial growth curves obtained under different conditions to allow students to quantify key parameters such as lag time and growth rate by considering data from growth curves. Growth conditions (e.g. temperature, aw, osmotic pressure) encountered in food matrices as well as in bacterial production will be considered.
Objectifs d'apprentissage	-Know the main characteristics of a bioreactor. -Knowledge of the different steps of bacterial and yeast division at the single cell level. -Knowledge of the main parameters that characterize microbial growth. -Quantify these parameters by considering data from a growth curve (graph and table) -Knowledge of the different types of energy sources for microorganisms (as autotrophic, heterotrophic, phototrophic and chemotrophic species)
Pré-requis	Basic knowledge of cell biology: Definition of a cell
Contenu	Courses + oral presentation (poster)

Évaluations	CT : écrit individuel	CC : écrit individuel	CC : oral en groupe
Coefficient	2	0.5	0.5

D-M1MP2-S1-AA-UE06 : Food Chemistry and Physico chemistry
Module Obligatoire

D-M1MP2-S1-AA-UE06-M01

Basis in food physics

Nb heures / étudiant	30				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	12	14	4	-	-
Nb groupes	1	1	1	-	-

Enseignants responsables	Elias BOU MAROUN, Stephane GUYOT, Gaelle ARVISENET
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	
Objectifs Developpement Durable	Consommation et production responsables

Intervenants Internes	Dominique CHAMPION, Nicolas SOK, Camille LOUPIAC

Objectifs du module	- Basic knowledge of the impact of physicochemical parameters applied to food ingredients - Basic knowledge of the principles of chromatography and spectroscopy applied to foods
Objectifs d'apprentissage	
Pré-requis	
Contenu	- Lecture: Introduction to Food complexity - Lecture: Biochemistry of food colloids: (lipids, proteins, polysaccharides, ….) structure and functionalities, Impact of processes - Lecture: Physical chemistry: Physical state, stability under T, RH, P… - Lecture: Analytical chemistry applied to food and ingredients structure and stability: chromatography, spectroscopy - Tutorial: Sugars (maillard), proteins (solubility-functionalities) - Tutorial: Physical chemistry: physical state /texture/ stability - Tutorial: Ingridients analysis - Tutorial: Practical class briefing: proteins powders - Practical: Proteins Powders : analysis and functionalities

Évaluations	CC : compte-rendu ou rapport écrit en groupe	CT : écrit individuel
Coefficient	2	5

D-M1MP2-S1-AA-UE06 : Food Chemistry and Physico chemistry
Module Obligatoire

D-M1MP2-S1-AA-UE06-M02

Basis in Wine chemistry

Nb heures / étudiant	20				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	8	8	4	-	-
Nb groupes	1	1	1	-	-

Enseignants responsables	Elias BOU MAROUN, Stephane GUYOT, Gaelle ARVISENET
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	
Objectifs Developpement Durable	Consommation et production responsables

Objectifs du module	The objective of this teaching unit is to provide students with a comprehensive understanding of wine composition and analysis, including the fundamental aspects of grapevine and wine components. Through lectures, tutorials, and practical sessions, students will explore wine oxidation, processing, stability, color, and polyphenols, and will gain hands-on experience with wine analysis techniques and the effects of various factors on wine quality.
Objectifs d'apprentissage	
Pré-requis	
Contenu	- Lecture: Introduction to Wine and grapevine composition - Lecture: introduction to wine analysis - Tutorial: wine oxidation and processing and stability - Tutorial: Wine color and proteins powders - Practial: Wine color and polyphenols

Évaluations	CC : compte-rendu ou rapport écrit en groupe	CC : oral individuel
Coefficient	2	3

D-M1MP2-S1-AA-UE07-M01

Microbiology and Microbiological Processses

Nb heures / étudiant	40				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	16	16	8	-	-
Nb groupes	1	1	1	-	-

Enseignants responsables	Elias BOU MAROUN, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	
Objectifs Developpement Durable	Consommation et production responsables, Recours aux énergies renouvelables, Lutte contre le changement climatique

Objectifs du module	Knowledge of the microbial world and potential applications (environmental, agri-food) and food processes used to preserve microorganisms of interest and kill unwanted microorganisms. Courses are related to: -Food microbiological processes: preservation processes of microorganisms of interest, food decontamination, innovations and a focus on heat transfer in food processes - Microbial stress response (bacteria and yeasts) -Virulence mechanisms of some foodborne pathogens (such as EHEC, Listeria monocytogenes, Clostridium botulinum and Cronobacter sakazakii) -Fundamentals of food parasitology -Focus on analyzing data, especially statistical analysis
Objectifs d'apprentissage	- Knowledge of major food microbiology processes -Knowledge of heat transfer fundamentals for microbial process design -Knowing how to perform statistical tests to analyze data -Knowledge of the mechanisms of virulence and stress response of food borne pathogens
Pré-requis	Basic knowledge of cell biology: Definition of a cell Basic knowledge of mathematics
Contenu	Introduction to microbiological food processes used to preserve microorganisms of interest (ferments and probiotics) and to fight against undesired microorganisms (foodborne pathogens and alteration flora). Introduction to heat transfer in food processes

Évaluations	Contrôle Continu Oral	CT : écrit individuel
Coefficient	2	4

SEMESTRE 2

Microbiologie et physicochimie pour les procédés alimentaires et viticoles			
Unité d'enseignement	Module	Heures étudiant	Coefficient
D-M1MP2-S2-AA-UE08 - Fundamentals of neuro-psychology	Neurobiology of memory and emotions	26	3
D-M1MP2-P2FOOD-S2-TC-UE09 - Descriptive sensory analysis	Multivariate statistics	14	2
	Sensory profile and rapid descriptive sensory tests	18	3
D-M1MP2-P2FOOD-S2-TC-UE10 - Food texture and aroma	Properties and analysis of aroma compounds	14	1
	Food structure and rheological properties	6	1
D-M1MP2-S2-AA-UE11A - Analytical chemistry applied to food fraud	Analytical chemistry applied to fraud in Food	24	3
D-M1MP2-P2FOOD-S2-TC-UE12 - Discovering business and research	Job hunting	16	0
	Scientific writting	10	3
	Discovering career prospects	10	1
D-M1MP2-S2-AA-UE13A - Internship	Litterature review of the internship	6	2
	Internship report & defense	0	10
D-M1MP2-S2-AA-UE14A - New sources of proteins	New sources of proteins	24	3
	Total	**168**	

D-M1MP2-S2-AA-UE08 : Fundamentals of neuro-psychology
Module Obligatoire

D-M1MP2-P2FOOD-S2-TC-UE08-M01

Neurobiology of memory and emotions

Nb heures / étudiant	26				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	20	2	4	-	-
Nb groupes	1	1	0.5	-	-

Enseignants responsables	Elias BOU MAROUN, Gaelle ARVISENET, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Objectifs du module	The aim of this course is to present to the students various factors known to influence the process of food choice, translating the acceptance or the rejection of a food.
Objectifs d'apprentissage	Students will discover how the eating habits, even if motivated by internal needs for energy order, stay a voluntary behavior based on the consumer's decision. They will identify the multiple factors involved in this decision, and the 2 systems involved in feeding behavior: the homeostatic system and the hedonic system. Finaly, they will adress the learning and memory processes, the emotional dimension of eating, the food palatability and reward.
Pré-requis	
Contenu	lectures: -Neurosciences basics: human brain anatomy -Neuroanatomical and functional basis of memory -Role of learning & memory processes in feeding behavior -Brain and reward circuit -Neuroanatomical substrate of emotions Tutorial : physiology of food intake Practical: Brain neuroanatomy : illustration of regions involved in memory, emotions, reward and food intake

Évaluations	CT : écrit individuel	CC : oral en groupe
Coefficient	2	1

D-M1MP2-P2FOOD-S2-TC-UE09 : Descriptive sensory analysis
Module Obligatoire

D-M1MP2-P2FOOD-S2-TC-UE09-M01

Multivariate statistics

Nb heures / étudiant	14				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	5	9	-	-	-
Nb groupes	1	1	-	-	-

Enseignants responsables	Gaelle ARVISENET, Pierre-Yves LOUIS, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Intervenants Internes	Pierre-Yves LOUIS

Objectifs du module	Students will discover multivariate statistics and their applications.
Objectifs d'apprentissage	Comprehensive exploration of complex datasets obtained in the fields of sensory analysis and consumer science.
Pré-requis	Unit "Statistics" of 1st semestre of M1 STAAE
Contenu	ACP, AFC, AFM, DISTATIS, ... HCA and cluster analysis,

Évaluations	CC : compte-rendu ou rapport écrit en groupe
Coefficient	2

D-M1MP2-P2FOOD-S2-TC-UE09 : Descriptive sensory analysis
Module Obligatoire

D-M1MP2-P2FOOD-S2-TC-UE09-M02

Sensory profile and rapid descriptive sensory tests

Nb heures / étudiant	18				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	2	6	10	-	-
Nb groupes	1	1	0.5	-	-

Enseignants responsables	Elias BOU MAROUN, Stephane GUYOT, Gaelle ARVISENET
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Objectifs du module	discover rapide descriptive sensory methods
Objectifs d'apprentissage	Understand the interests and limits of the rapids descriptive methods, and be able to choose the most appropriate method to aswer a specific question. Carry out the test, analyze and interpret data
Pré-requis	Units "Statistics" and "Perception and introduction to sensory evaluation", semester 1 Master 1 STAAE
Contenu	Students will work in group Introduction to descriptive methods (Lecture, 1h) Bibliography (tutorial, 2h) Choice of a method and conception of a protocol to answer a specific objective (tutorial, 2h) Organization of the test and data collection (practical, 4h) Formatting, checking and analyzing data (tutorial and practical, 6h) Presentation of the method to other groups and professors

Évaluations	CC : oral en groupe
Coefficient	3

D-M1MP2-P2FOOD-S2-TC-UE10 : Food texture and aroma
Module Obligatoire

D-M1MP2-P2FOOD-S2-TC-UE10-M01

Properties and analysis of aroma compounds

Nb heures / étudiant	14				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	8	-	6	-	-
Nb groupes	1	-	0.5	-	-

Enseignants responsables	Gaelle ARVISENET, Helene LABOURE, Elias BOU MAROUN
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Intervenants Internes	Elias BOU MAROUN

Objectifs du module	Students will discover the properties and fromation of aroma compounds, as well and the analysis techniques that allow to study compounds responsible of aroma
Objectifs d'apprentissage	Students will discover the properties and fromation of aroma compounds, as well and the analysis techniques that allow to study compounds responsible of aroma
Pré-requis	
Contenu	Properties of volatile and aroma compound The properties a volatile compounds must have to be odorant Origin of food aroma compounds Methods of extraction and analysis of aroma compounds

Évaluations	CT : écrit individuel
Coefficient	1

D-M1MP2-P2FOOD-S2-TC-UE10 : Food texture and aroma
Module Obligatoire

D-M1MP2-P2FOOD-S2-TC-UE10-M02

Food structure and rheological properties

Nb heures / étudiant	6				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	2	-	4	-	-
Nb groupes	1	-	0.5	-	-

Enseignants responsables	Stephane GUYOT, Gaelle ARVISENET, Helene LABOURE
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Objectifs du module	Students will understand the relation between food structure and texture, and discover rheological methods to study food texture
Objectifs d'apprentissage	Students will understand the relation between food structure and texture, and discover rheological methods to study food texture
Pré-requis	
Contenu	

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

D-M1MP2-S2-AA-UE11A : Analytical chemistry applied to food fraud
Module Obligatoire

D-M1MP2-S2-AA-UE11A-M01

Analytical chemistry applied to fraud in Food

Nb heures / étudiant	24				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	10	6	8	-	-
Nb groupes	1	1	0.5	-	-

Enseignants responsables	Gaelle ARVISENET, Elias BOU MAROUN, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	
Objectifs Developpement Durable	Module ressource, non concerné

Intervenants Internes	Elias BOU MAROUN, Nicolas SOK, Laurence DUJOURDY

Objectifs du module	The aim of the module is to present the specific use of analytical chemistry applied to the analysis of fraud in raw materials and food. Skills: Knowing the different types of fraud. Knowing how to choose the appropriate analytical technique for the product and especially for the fraud. Being able to lead a group analysis project based on a concrete case.
Objectifs d'apprentissage	
Pré-requis	
Contenu	Introduction to types of fraud and their consequences. Presentation of the DGCCRF and the inspector's profession. Visit to an analysis platform. Use of chromatographic methods to detect fraud. Use of spectroscopic methods to detect fraud. Pre-treatment of samples. Statistical processing of analysis results. Chemical assays. Group projects on the use of analytical chemistry in detecting fraud in products such as milk, oils, juices, wine, chocolate, honey, etc.

Évaluations	CC : oral en groupe
Coefficient	3

D-M1MP2-P2FOOD-S2-TC-UE12 : Discovering business and research
Module Obligatoire

D-M1MP2-P2FOOD-S2-TC-UE12-M01

Job hunting

Nb heures / étudiant	16				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	-	16	-	-	-
Nb groupes	-	1	-	-	-

Enseignants responsables	Gaelle ARVISENET, Elias BOU MAROUN, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Objectifs du module	Preparation for professional life
Objectifs d'apprentissage	Students will learn to identify their skills and to write a convincing application for an internship or a job
Pré-requis	
Contenu	

Évaluations	CC : attestation de présence
Coefficient	-

D-M1MP2-P2FOOD-S2-TC-UE12 : Discovering business and research
Module Obligatoire

D-M1MP2-P2FOOD-S2-TC-UE12-M02

Scientific writting

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

Enseignants responsables	Gaelle ARVISENET, Elias BOU MAROUN, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Objectifs du module	Develop scientific writing skills in preparation for the writting of M1 internship dissertation and Master's thesis
Objectifs d'apprentissage	Develop scientific writing skills in preparation for the writting of M1 internship dissertation and Master's thesis
Pré-requis	UNit Toolbox, module "Bibliographical research and analysis of scientific articles" of M1 STAAE
Contenu	Identify the different types of scientific documents Know the structure of a scientific paper, Identify the main stages in the writing process, Find relevant sources and evaluate their trustfulness Set the context of a scientific project Be able to draw interpretation from scientific results, and to compare them with published results

Évaluations	CC : écrit individuel
Coefficient	3

D-M1MP2-P2FOOD-S2-TC-UE12-M03

Discovering career prospects

Nb heures / étudiant	10				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	-	-	10	-	-
Nb groupes	-	-	-	-	-

Enseignants responsables	Gaelle ARVISENET, Elias BOU MAROUN, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	A venir pour les formations autres qu'ingénieurs
Objectifs Developpement Durable	Module ressource, non concerné

Objectifs du module	Preparation for professional life
Objectifs d'apprentissage	Students will discover the possible outlets for the Master's degree in companies and research laboratories They will start creating their prefessional network
Pré-requis	
Contenu	Students work by group and prepare a presentation about a specific type of outlet. They interview professionals, and prepare a presentation, that will be used for a discussion with the other students of the group

Évaluations	CC : oral en groupe
Coefficient	1

D-M1MP2-S2-AA-UE13A : Internship
Module Obligatoire

D-M1MP2-S2-AA-UE13A-M01

Litterature review of the internship

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

Enseignants responsables	Gaelle ARVISENET, Elias BOU MAROUN, Stephane GUYOT
Département/UPé	
Compétences	
Objectifs Developpement Durable	Consommation et production responsables

Objectifs du module	
Objectifs d'apprentissage	
Pré-requis	
Contenu	

Évaluations	CC : écrit individuel
Coefficient	2

D-M1MP2-S2-AA-UE13A : Internship
Module Obligatoire

D-M1MP2-S2-AA-UE13A-M02

Internship report & defense

Nb heures / étudiant	0				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	-	-	-	-	-
Nb groupes	-	-	-	-	-

Enseignants responsables	Gaelle ARVISENET, Elias BOU MAROUN, Philippe GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	
Objectifs Developpement Durable	Consommation et production responsables

Objectifs du module	
Objectifs d'apprentissage	
Pré-requis	
Contenu	

Évaluations	CT : Rapport de stage	CT : Soutenance de stage
Coefficient	5	5

D-M1MP2-S2-AA-UE14A : New sources of proteins
Module Obligatoire

D-M1MP2-S2-AA-UE14A-M01

New sources of proteins

Nb heures / étudiant	24				
Formes Pédago.	CM	TD	TP	ST	Vis
Nb heures	6	6	12	-	-
Nb groupes	1	1	1	-	-

Enseignants responsables	Gaelle ARVISENET, Elias BOU MAROUN, Stephane GUYOT
Département/UPé	SCIENCES ALIMENTS-NUTRITION
Compétences	
Objectifs Developpement Durable	Consommation et production responsables, Lutte contre le changement climatique

Intervenants Internes	Camille LOUPIAC, Aurelie LAGORCE

Objectifs du module	To know, understand, and analyze the potential and barriers in terms of the use of unconventional proteins (insects, plant-based, algae) in human and animal food (lectures, tutorials, and practical work in the form of projects).
Objectifs d'apprentissage	
Pré-requis	
Contenu	Chemical analysis and functionality of unconventional proteins. Practical work and tutorials based on projects and lectures with contributions from professionals on socio-economic issues and production.

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