

Diploma :	MASTER					Year
Study field :	SCIENCES – TECHNOLOGIES - HEALTH					M2
Label :	Sciences and Techniques of Agriculture, Nutrition and Environment					
Course :	Microbiology and Physicochemistry for Food and Wine Processes (MP2)					
Student hourly volume option 1	146 h	56 h	48 h	h	5/6 mois	250 h
Student hourly volume option 2	90	100	60		5/6 mois	250 h
	lectures	Tutorials	practicals	Integrated hours	Training session or project	total
Course taught in :	français		<input checked="" type="checkbox"/> anglais			

Contacts :

Course responsables	Educational administration department
<p>Stéphanie Weidmann Lecturer ☎ 03.80.39.62.62 stephanie.weidmann@u-bourgogne.fr</p> <p>Stéphane Guyot Lecturer ☎ 03.80.77.23.87 stephane.guyot@agrosupdijon.fr</p> <p>Camille Loupiac Lecturer ☎ 03.80.77.40.84 camille.loupiac@agrosupdijon.fr</p>	<p>Delphine Cornot ☎ 03 80 77 26 04 delphine.cornot@agrosupdijon.fr</p>
Administrative affiliation :	Agrosupdijon; UB UFR SVTE; UBFC

Aims of the course and job openings

■ Objectives :

The MP2 course aims at training agribusiness executives. This course is organized with a common core and options that allow students to specialize in Research & Development in the fields of microbiology, microbiological process or physicochemistry of food and wine. Depending on the chosen option, this degree allows:

- to train managers who participate in the innovation process of the agri-food company by the knowledge and valorization of microbial technological flora and related processes. In an R & D process, students are trained, among other things, to optimize processes for the production of fermented foods, to create new products, and to develop methods and tools to ensure the microbiological safety of food.
- to train managers capable of managing research and development projects in the fields of chemical and physical characterization of complex matrices. As such, students are trained in experimental strategy and analytical methods that allow them to take into account chemical reactions and formulation / process / packaging interactions taking place within complex matrices. The fields of application are food, wine, cosmetics and health products.

■ Course openings (jobs or studies):

Graduates can decide at the end of the Master's degree to obtain a doctorate (first professional experience) and become the future managers of the R & D services of agri-food companies or to pursue careers of researchers or teacher-researchers in research institutes or in research institutes. universities, internationally. However, they will also be able to integrate business R & D services directly after the Master.

The possible job openings are:

- Project Manager Development of innovative products
- Research and Development Project Manager
- Laboratory manager
- Researcher - Teacher / Researcher
- Engineer / research engineer in agribusiness
- Formulator
- Agri-Food Advisor
- Technicocommercial

The training objectives and the timetable are foreseen to allow students to apply for doctoral thesis awarding competitions and more generally for PhD thesis pursuit within the framework of the CIFRE device and other financing devices (ADEME, INRA , Regional Council,)

■ Skills acquired at the end of the course :

- Communicating in English both in writing and orally
- Develop a well-grounded scientific experimental approach
- Manage a project
- Write summary reports, analyze and present the results
- Master the Good Laboratory Practices
- Know and respect regulations, sanitary standards and scientific ethics
- Apply safety standards related to products and their production technique - identification of risk products

AND

Option 1: Mastering the chemistry and physicochemistry of food systems in a "food design" approach (chemical reactions - neoformed - complex matrices - chemical and physicochemical characterization - formulation - process - packaging - quality - safety - stability)

OR

Option 2: Master the microbiology and microbiological processes of food systems in an innovation approach involving microorganisms

Only students holding a master 1 in the same mention benefit from the terms of the law of 23 December 2016 on the selection at the entrance of the master, and its decree of 25 January 2017.

■ upon selection :

To be admitted to the training, candidates must have a 1st year Master's degree or a 2nd cycle diploma of the corresponding level of the Master's degree or equivalent or higher degree: D.A.G. (Diploma of General Agronomy), D.I.A.G. (Diploma of General Food Industry), Engineer's Degree, State Diploma of Doctor in Medicine, State Diploma of Veterinary Doctor, State Diploma of Doctor in Pharmacy or certificate of registration in 6th year of Pharmacy. On the basis of equivalence, they can also justify obtaining 4 years of engineering studies, pharmaceutical studies, veterinary or medical studies.

Holders of a degree in Engineering, State Diploma of Doctor of Medicine, State Diploma of Veterinary Doctor, State Diploma of Doctor in Pharmacy can register in the title of the year of specialization.

The minimum admission requirement is the equivalence of 240 credits (ECTS) obtained in the field concerned.

Admission is conditional on passing a probationary examination involving the examination of a file (of which detailed curriculum vitae and transcript). Candidates selected on file are then summoned to an interview with a jury.

The welcoming capacity is 20 places per option.

Salaried students can follow the training for 2 years, in accordance with the regulations in force.

For students holding an M1 in a field other than the field concerned, entry to the M2 will be subject to the agreement of the training managers after examination of the candidates file by a pedagogical committee.

For foreign students, the equivalence of diplomas is subject to the opinion of the International Relations Department of the University of Burgundy.

Foreign students who do not have one of the French diplomas required for access to the training must imperatively constitute a file with the service of the International Relations (see calendar and deadline of deposit of file on the web page [ub-link](#) relating to this service: section "International students" and "To come to UB individually"), even if they are being trained in the higher in France at the time of filing. Students of French nationality with the required diplomas or equivalent, but obtained abroad must constitute a file of validation of acquired (to withdraw at the central schooling or the schooling of the UFR SVTE in case of admission in the die).

■ Continuous training course

La spécialité est ouverte à la formation continue sur la base de quatre places par an en dehors du recrutement normal.

L'obtention du diplôme en formation continue est accessible :

- aux demandeurs d'emploi
- dans le cadre d'un recyclage, d'une remise à niveau, ...

Les auditeurs libres sont acceptés après accord des responsables de la formation.

Course is open to continuing education at a rate of 4 places per year outside of the standard admission procedure.

Access to the diploma in continuing education is possible:

- for job seekers
- in the frame of a refresher course or a career move

Unregistered students are accepted after validation of the course responsible.

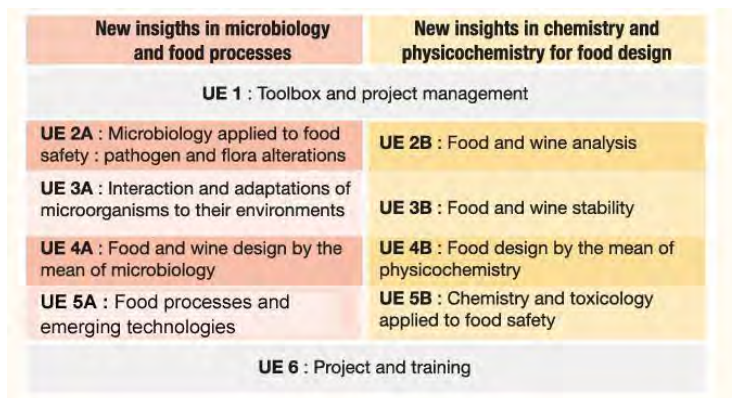
■ accreditation of learning or diploma equivalence

- full-time education: get in touch with the educational administration department of your course
- continuing education: get in touch with the educational administration department of the university (03.80.39.51.80)

Organisation and description of the courses :

- General outline of the possible courses :

Training description :

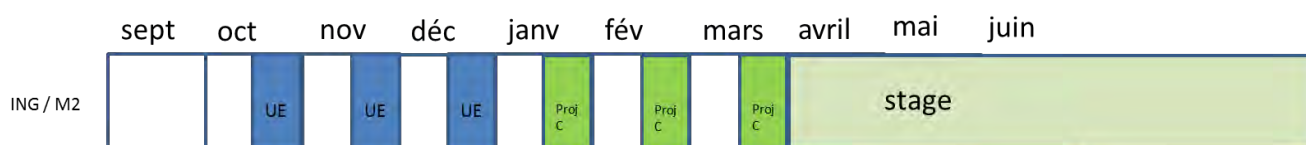


- The "Microbiology and Physicochemistry for Food and Wine Processes" course is designed in concert with the AgroSup Dijon engineering training to enable dual master / engineer degrees. The dominant third year of the engineering training AgroSup Dijon targeted by this device are those of the agri-food specialty.

M2 with student status, research or professional orientation depending on the project completed and the internship completed



Dual degree M2 / engineer AgroSup Dijon, under student status (curriculum arrangements with exemptions are then planned)



Simplified courses organisation :

Option 1: New insights in microbiology and food processes

THIRD SEMESTER

UE1*	discipline	CM	TD	TP	Total	ECTS	Type éval ⁽¹⁾ Session 1	Type éval ⁽¹⁾ Session 2	coeff CT	coeff CC	total coef
Toolbox and project management	Toolbox	16	34	0	50	1	Quizz on visits			1	1
	Project management		48**			5	Report and oral presentation of the project			5	5

(1) CA = continuous assessment, FE = final exam

* 8 hours will be common with M2 P2FOOD

** This hours won't be accounted in the « face to face » hours

UE 2A*	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
Microbiology applied to food safety: pathogens and flora alterations	Microbiology applied to food safety: pathogens and flora alterations	20	6	24	50	6	CA + FE oral or written	Oral FE	4	2	6
TOTAL UE		20	6	24	50	6			4	2	6

* part of this UE is mutualised with AMAQ

UE 3A	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
Interactions and adaptations of microorganisms to their environments	Interactions and adaptations of microorganisms to their environments	24	18	8	50	6	CA + FE oral or written	Oral FE	4	2	6
TOTAL UE		24	18	8	50	6			4	2	6

UE 4A	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
Food and wine design by the mean of microbiology	Food and wine design by the mean of microbiology	16	10	24	50	6	CA + FE oral or written	Oral FE	4	2	6
TOTAL UE		16	10	24	50	6			4	2	6

UE 5A	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
Food processes and emerging technologies	Food processes and emerging technologies	26	24	0	50	6	CA + FE oral or written	Oral FE	3,5	2,5	6
TOTAL UE		26	24	0	50	6			4	2	6

UE 7	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
Options facultatives	LV 2 (1)					0			0	0	0
	Stage supplémentaire facultatif (2)					0			0	0	0
TOTAL UE											

TOTAL S3	102	92	56	250	30						30
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FOURTH SEMESTER

UE 6	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
	Training management		80**				Oral-Report				30
	Training										
TOTAL UE			80			30					30

** This hours won't be accounted in the « face to face » hours

UE 7	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
Options facultatives	LV 2 (1)					0			0	0	0
	Stage supplémentaire facultatif (2)					0			0	0	0
TOTAL UE											

TOTAL S4					0	30					30
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Option 2: New insights in chemistry and physicochemistry for food design

THIRD SEMESTER

UE1*	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
Toolbox and project management	Toolbox	38	12	0	50	1	Quizz on visits			1	1
	Project management		48**			5	Report and oral presentation of the project			5	5
TOTAL UE		38	12	0	50	6				6	6

(1) CA = continuous assessment, FE = final exam

* 8 hours will be common with M2 P2FOOD

** This hours won't be accounted in the « face to face » hours

UE 2B	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
Food and wine analysis	Food and wine analysis										
TOTAL UE		8	22	20	50	6	CA + FE oral or written	Oral FE	4	2	6

UE 3B	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
Food and wine stability	Food and wine stability										
TOTAL UE		8	24	18	50	6	CA + FE oral or written	Oral FE	4	2	6

UE 4B	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef

Food design by the mean of physicochemistry	Food design by the mean of physicochemistry										
TOTAL UE		22	12	16	50	6	CA + FE oral or written	Oral FE	4	2	6

UE 5B*	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
Chemistry and toxicology applied to food safety	Chemistry and toxicology applied to food safety										
TOTAL UE		14	30	6	50	6	CA + FE oral or written	Oral FE	4	2	6

* part of this UE is mutualised with AMAQ

UE 7	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
Options facultatives	LV 2 (1)					0			0	0	0
	Stage supplémentaire facultatif (2)					0			0	0	0
TOTAL UE											

TOTAL S3	90	100	60	250	30						30
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FOURTH SEMESTER

UE 6	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
	Training management		80**				Oral-Report				30
	Training										
TOTAL UE			80			30					30

** This hours won't be accounted in the « face to face » hours

UE 7	subject	lecture	Tutorials	practicals	Total	ECTS	assessment ⁽¹⁾ Session 1	assessment ⁽¹⁾ Session 2	coeff FE	coeff CA	total coef
Voluntary options	LV 2 (1)					0			0	0	0
	Additional internship (2)					0			0	0	0
TOTAL UE											

TOTAL S4				0	30						30
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(1) CA = Continuous Assessment, FE = Final Exam

(2) It is the responsibility of students choosing to follow an additional language class to get information from the Language Center of the University of Burgundy. No note will be integrated to the semester results for this second language, nor will appear on the transcript. The jury is free to highlight the grade by giving extra "jury points".

(3) This optional course, if considered by the student, should take place in a structure different from that planned in semester 4 (during the same academic year) or be on a different topic. It will then obligatorily result in a

different internship agreement, an additional report, but which will not be graded or valued in the calculation of the master. The head of the sector and / or the director of the UFR reserves the right to refuse the optional internship requested.

The rules for LMD (Licence, Master, Doctorat / Degree, Master, PhD) are to be found in the common studies referential uploaded on the University Website :

<http://ufr-svte.u-bourgogne.fr/images/stories/pdf/Doc-telechargeables/referentiel-commun-etudes-2017-2018.pdf>

ADDITIONAL TEACHING UNITS

Students have the opportunity to follow additional teaching units during S3 and / or S4, provided that this transversal UE has not already been followed during the uB course. The result obtained in the transversal EU confers a point gain on the average of the semester. As a derogation from the general terms and conditions of the uB, the point gain is calculated by the sovereign jury: it can be added 0, 0.1 or 0.2 point to the average of the semester following the result obtained in the additional units.

http://www.u-bourgogne-formation.fr/IMG/pdf/referentiel_etudes_lmd.pdf

● **Exams**

The UE1 consists of a tutored project and a set of courses to manage this project.

Tutored project :

The student must lead a group project including a part of current literature search and an experimental part. This project is given each year by a sponsor of academic or industrial research. The objectives of this tutored project are to apply the knowledge gained in UE1 (project management - experience plan - databases - data analysis). Group work should allow students to better understand teamwork. These projects will be largely conducted in the laboratories of the master and will allow students to know the operation of these laboratories and backed platforms.

For dual engineer / M2 students, this project is confused with project C of engineering education.

This project results in a written report and two presentations (one at the beginning and one at the end), both in English.

Events on courses, TD and TP from EU 2 to 5:

UEs 2 to 5 are taught during semester S3 and are subject to examination during this semester. The assessment sessions include at least one writing and for some UEs a continuous assessment. The examination is based on a program defined by the teacher responsible for the exam.

UE6 corresponds to the internship.

Internship :

Only one course is carried out following the lessons, from January. Its duration is at least 5 months and at most 6 months.

These courses take place, mainly, in the agri-food, pharmaceutical or medical industries, in private research laboratories, in academic reception laboratories (mainly UMR PAM, MICALIS, UMR Lipid Nutrition Cancer, UMR Agro ecology ...).

The nature of the internship, its duration, as well as the subject that will be treated, are fixed jointly by the Training Supervisor and the Course Manager. The follow-up of these courses is ensured by a teacher of the formation (tutor) and the person in charge of the course. This follow-up may include the visit of a teacher of the training (tutor) in the host company.

The internship gives rise to a written report of 25 pages and to a oral defence of 15 minutes, in front of a jury. The internship is validated by a note evaluating the written report and a note evaluating the oral defence. The average of these two marks is the final grade of the internship.

NON-ATTENDANCE TO EXAMS :

Non-attendance to exams have the following consequences :

- Justified non-attendance to a continuous assessment (CA) : Failure.

The teaching team will endeavour to propose a catch-up or compensation solution in case of justified absence to a continuous control evaluation.

- Justified non-attendance to a final exam (FE) : Failure (retaking in second session)
- Unjustified non-attendance to a continuous assessment (CA) : Failure (the entire year will not be validated)

- Unjustified non-attendance to a final exam (FE) : Failure (retaking in second session).

● **Validation and capitalisation rules :**

General principles:

COMPENSATION : A compensation is made for every semester. The grade for the semester is calculated from the average grades of the teaching units of the semester, to which are applied the coefficients. The semester is considered as passed if the general grade for every unit, once the coefficients applied, is superior or equal to 10 out of 20.

CAPITALISATION : Every teaching unit is granted a number of European credits (ECTS). A teaching unit is validated and capitalised, that is to say definitely acquired, when the student gets an average grade of 10 out of 20 for the entire unit (the school subjects counterbalancing each other's). Every teaching unit validated allows the student to acquire the equivalent European credits. If the school subjects themselves have a ECTS value, they are acquired when the grades for every subject is superior or equal to 10 out of 20.

In case of retaking or spreading the studies on several years, the conservation of grades higher than 12 out of 20 in continuous assessment, teaching units, and non-validated semesters is automatic.

Students have the possibility to renounce to this conservation, in a written way, in the month following the start of their school year. After this, no request will be receivable.

In case of renunciation duly received, only the new grade will be kept (crushing). It will not be possible to keep the best grade between 2. In case of non-attendance, justified or not, only the consequence of this non-attendance will be kept, and it will not be possible to take the previous grade into account.

■ **Improvement board**

The improvement board of the course is compounded of the course responsible (a representative for UB and one for Agrosup), responsible of M1 and M1, four students' representative, representative from the establishments involved in the course (UB, AgroSup, UFC), and professional of food-processing industry (a representative from a big corporation, one from an average-sized company and a representative from the VITAGORA center of excellence.) This board will meet annually with the following objectives :

- draw conclusions of the evaluations,
- bring improvements to the course in harmony to the market's expectation in terms of job openings related to the professional integration of students
- offer national and international partnerships