SCIENCES, TECHNOLOGIES AND HEALTH

Master in Chemistry

Chimie

Target level
Baccalaureate +5

ECTS
120 credits

Duration
2 years

Component
UFR Chimie-Biologie

Language(s) of instruction
English

Subprograms

- Chemistry 1st year
- ChemTechCo 2nd year
- Chemistry for life sciences 2nd year
- Polymers for advanced technologies 2nd year
- Organic synthesis 2nd year

Presentation

The master in Chemistry of the Université Grenoble Alpes is a two-year diploma course. Within the master in Chemistry, the training follows a progressive specialization. The aim is to give master's students a common base of knowledge and skills in chemistry in the first year and then specialized teaching in four master 2 courses. The first year is common to the four master 2 programs :

- Chemistry for life sciences (CLS)
- Organic synthesis for pharamceutical and agrochemical industries (SO-IPA)
- Polymers for advanced technologies (PTA)
- ChemTechCo (CTC)

During the master's in Chemistry degree, students will acquire both in-depth theoretical skills in their field of specialization, as part of the 2nd year programs, and general skills in chemistry, with a wealth of experimental know-how in this field where bench experiment is of prime importance. In this way, students will acquire the disciplinary skills vital for any type of chemist (in particular analytical methods, spectroscopy, experimental and bibliographic techniques, amongst others) and skills more focused on the applications specific to each master 2 programs. The more specific classes vary from the life sciences interface, to polymer materials and organic synthesis. A Master 2 program is also dedicated to technical sale training

The classes will be given in English discipline .

The “disciplinary” classes are also supplemented by several cross-disciplinary classes regarding graduate employment, and by mandatory internships (from 2 to 5 months in 1st year and 6 months in 2nd year) which enable the students to get to grips with working in a team, in an academic or industrial setting, in France or abroad.

At the end of the master’s degree, which draws on a rich network of businesses and research laboratories on the site, graduates wishing to enter the industry with five years of university education will be able to work as laboratory managers (as design engineers, research and development engineers, team leaders, pilot managers, production managers, heads of process management and improvement or heads of industrialisation). Those who want to continue with a thesis will be able to undertake doctoral studies to become researchers (towards posts in higher education, public research or industry). The ChemTechCo program, which is a work-linked course, trains technical sales representatives for companies in the chemical instrumentation and environmental analysis sectors.

Skills

The master in Chemistry provides general scientific skills in organic chemistry, bio-organic, bio-inorganic, chemistry and physico-chemistry of polymers, analytical chemistry, with a very high proportion of experimental work, constituting the common base of the four Chemistry courses (more than 30 ECTS). Added to this is the progressive specialization, specific and advanced scientific skills for each 2nd year's course: sales techniques, interface with biology, polymers and organic synthesis. In addition, organizational skills (know-how) and relational skills (know-how) allowing a good professional integration are also provided through different UEs, and in particular in the UEs of compulsory professional insertion (communication, project management, work as a team...)

International education : Internationally-oriented programmes

International dimension

International training both in the importance of teaching in English and the reception of foreign English-speaking students, as well as the possibility of doing an internship abroad. Several students of this Master have been recruited internationally. The master in Chemistry offers three complete courses in English over two years.

Admission

Access conditions

- First year master's degree : If you have completed a bachelor's degree in Science chemistry, Biological chemistry or Physical chemistry or are enrolled in the final semester of a bachelor's program in the same domain, you are eligible to apply to the master's degree in Chemistry
- Second year master's degree : To be eligible to apply you should have completed, or be enrolled in a first year of a master program in Chemistry, Biological chemistry or Physical chemistry , and totalize 60 ECTS

Public continuing education : You are in charge of continuing education :

• if you resume your studies after 2 years of interruption of studies
• or if you followed training under the continuous training regime one of the previous 2 years
• or if you are an employee, job seeker, self-employed

If you do not have the diploma required to integrate the training, you can undertake a validation of personal and professional achievements (VAPP)

Candidature / Application

Master 1

Opening period : **from 26 of february to 24 of march 2024 included** with monmaster.gouv.fr

Master 2

Opening period : **from 4th of march to 27 of march 2024 included** with e-candidat

You want to apply and sign up for a course master ? Please be aware that the procedure differs depending on the diploma you want to take, the diploma you have already obtained and, for foreign students, your place of residence. Let us be your guide – simply follow this link

Fees

UGA registration fees : 243 € + 100 € CVEC

And after

Additional information

Le parcours ChemTechCo, qui est une formation en alternance, forme des technico-commerciaux pour les entreprises des secteurs de l'instrumentation en chimie et de l'analyse environnementale.

Useful info

Contacts

Program director

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Administrative contact

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Course location(s) - City

Grenoble

Campus

Grenoble - University campus

Know more

Master's degree in Chemistry website

https://master-chimie.univ-grenoble-alpes.fr

Program

Chemistry 1st year

Master 1st year

Semester 7

	Nature	CM	TD	TP	Crédits
UE Experimental chemistry	Teaching Unit (UE)		3h	48h	6 credits
UE Analytical and spectroscopic methods	Teaching Unit (UE)	12h			6 credits
UE Organic chemistry 1	Teaching Unit (UE)	30h	20h		6 credits
UE Organometallic catalysis	Teaching Unit (UE)	30h	20h		6 credits
UE Polymers 1	Teaching Unit (UE)	22h	12h	16h	6 credits
Chemistry of Biomolecules	Teaching Unit (UE)	30h	20h		6 credits

Semester 8

	Nature	CM	TD	TP	Crédits
UE Analytical and spectroscopic methods II	Teaching Unit (UE)	13,5h			3 credits
UE Internship	Teaching Unit (UE)				6 credits
UE Organic chemistry 2	Teaching Unit (UE)	30h	20h		6 credits
UE Bioorganic and bioinorganic chemistry	Teaching Unit (UE)	36,5h	13,5h		6 credits
UE Polymers 2 chemistry and physico-chemistry	Teaching Unit (UE)	38h	12h		6 credits
UE Macromolecular engineering	Teaching Unit (UE)	22,5h	15h	9h	6 credits

UE Lab project	Teaching Unit (UE)			50h	6 credits
UE English	Teaching Unit (UE)		24h		3 credits
UE ETC	Teaching Unit (UE)				3 credits

ChemTechCo 2nd year

Semestre 9

	Nature	CM	TD	TP	Crédits
UE TECH2 Chromatographie et spectroscopie	Teaching Unit (UE)	24h		24h	6 credits
UE Analyses électrochimiques, environnementales et spectroscopiques (AEES)	Teaching Unit (UE)	40h		20h	6 credits
UE Techniques de vente et de commercialisation	Teaching Unit (UE)	72h	15h		6 credits
UE Science de gestion	Teaching Unit (UE)	62h	12h		6 credits
UE Contexte professionnel	Teaching Unit (UE)	59h	13h		6 credits
UE Projet de fin d'études	Teaching Unit (UE)	12h	40h		6 credits

Semestre 10

	Nature	CM	TD	TP	Crédits
UE Stage	Teaching Unit (UE)	37h	30h		27 credits
UE Anglais	Teaching Unit (UE)	24h			3 credits
UE ETC	Teaching Unit (UE)				3 credits

Chemistry for life sciences 2nd year

Master 2nd year

Semester 9 P

	Nature	CM	TD	TP	Crédits
UE Bio-targeted chemistry 1	Teaching Unit (UE)	20h			3 credits
UE Bionorganic chemistry	Teaching Unit (UE)	26h	14h		6 credits
UE Topics in biological chemistry	Teaching Unit (UE)	15h	5h		3 credits
UE Bio-targeted chemistry 2	Teaching Unit (UE)	20h			3 credits
UE Green chemistry	Teaching Unit (UE)	36h	4,5h		3 credits
UE Outils pour l'ingénieur	Teaching Unit (UE)	38h			3 credits
UE Entrepreneurship and Sciences	Teaching Unit (UE)	36h			3 credits
UE Heterocyclic chemistry	Teaching Unit (UE)	27h	3h		3 credits
UE Développement chimique	Teaching Unit (UE)	18h	15h		3 credits
UE Chimie médicinale et Médicaments	Teaching Unit (UE)	22,5h	4,5h		3 credits
UE Entrepreneurship and Sciences	Teaching Unit (UE)	14h	10h		3 credits

Semester 9 R

	Nature	CM	TD	TP	Crédits
UE Bio-targeted chemistry 1	Teaching Unit (UE)	20h			3 credits
UE Bionorganic chemistry	Teaching Unit (UE)	26h	14h		6 credits
UE Topics in biological chemistry	Teaching Unit (UE)	15h	5h		3 credits
UE Bio-targeted chemistry 2	Teaching Unit (UE)	20h			3 credits

UE Bibliography project	Teaching Unit (UE)		15h		3 credits
UE High troughput biology	Teaching Unit (UE)	30h	10h		6 credits
UE Structure determination of biological macromolecules	Teaching Unit (UE)	19h	12h	10h	6 credits
UE Heterocyclic chemistry	Teaching Unit (UE)	27h	3h		3 credits
UE Molecular modelling	Teaching Unit (UE)	12h		9h	3 credits
UE Green chemistry	Teaching Unit (UE)	36h	4,5h		3 credits
UE Chimie médicinale et Médicaments	Teaching Unit (UE)	22,5h	4,5h		3 credits
UE Outils pour l'ingénieur	Teaching Unit (UE)	38h			3 credits
UE Entrepreneurship and Sciences	Teaching Unit (UE)	14h	10h		3 credits

Semester 10 P

	Nature	CM	TD	TP	Crédits
UE Internship	Teaching Unit (UE)				27 credits
UE English	Teaching Unit (UE)		24h		3 credits
UE ETC	Teaching Unit (UE)				3 credits

Semester 10 R

	Nature	CM	TD	TP	Crédits
UE Internship	Teaching Unit (UE)				27 credits
UE English	Teaching Unit (UE)		24h		3 credits
UE ETC	Teaching Unit (UE)				3 credits

UE Stage	Teaching Unit (UE)	27 credits

Polymers for advanced technologies 2nd year

Master 2nd year

Semester 9 P

	Nature	CM	TD	TP	Crédits
UE Polymers for flexible electronics	Teaching Unit (UE)	15h	9h		6 credits
UE Biomaterials	Teaching Unit (UE)	15h	9h		6 credits
UE Nanostructured materials	Teaching Unit (UE)	15h	9h		3 credits
UE Degradation and sustainability	Teaching Unit (UE)	15h	9h		3 credits
UE Analysis, formulation and coatings	Teaching Unit (UE)	15h	9h	16h	3 credits
UE Tools for investigating polymers	Teaching Unit (UE)	20h	14h		3 credits
UE Polymers for renewable energy sources	Teaching Unit (UE)	15h	9h		3 credits
UE Biobased polymers	Teaching Unit (UE)	15h	9h		3 credits
UE Entrepreneurship and Sciences	Teaching Unit (UE)	36h			3 credits
UE Outils pour l'ingénieur	Teaching Unit (UE)	38h			3 credits

Semester 9 R

	Nature	CM	TD	TP	Crédits
UE Polymers for flexible electronics	Teaching Unit (UE)	15h	9h		6 credits
UE Biomaterials	Teaching Unit (UE)	15h	9h		6 credits

UE Nanostructured materials	Teaching Unit (UE)	15h	9h		3 credits
UE Analysis, formulation and coatings	Teaching Unit (UE)	15h	9h	16h	3 credits
UE Tools for investigating polymers	Teaching Unit (UE)	20h	14h		3 credits
UE Polymers for renewable energy sources	Teaching Unit (UE)	15h	9h		3 credits
UE Biobased polymers	Teaching Unit (UE)	15h	9h		3 credits
UE Bibliography project	Teaching Unit (UE)		15h		3 credits
UE Molecular modelling	Teaching Unit (UE)	12h		9h	3 credits
UE Green chemistry	Teaching Unit (UE)	36h	4,5h		3 credits
UE Degradation and sustainability	Teaching Unit (UE)	15h	9h		3 credits
UE Outils pour l'ingénieur	Teaching Unit (UE)	38h			3 credits
UE Entrepreneurship and Sciences	Teaching Unit (UE)	14h	10h		3 credits

Semester 10 P

	Nature	CM	TD	TP	Crédits
UE Internship	Teaching Unit (UE)				27 credits
UE Anglais	Teaching Unit (UE)		28h		3 credits
UE ETC	Teaching Unit (UE)				3 credits

Semester 10 R

	Nature	CM	TD	TP	Crédits
UE Internship	Teaching Unit (UE)				27 credits

UE Anglais	Teaching Unit (UE)		28h		3 credits
UE ETC	Teaching Unit (UE)				3 credits
UE Internship	Teaching Unit (UE)				24 credits
UE Ecole d'été - Graduate school EUR CBS	Teaching Unit (UE)				3 credits

Organic synthesis 2nd year

Master 2nd year

Semester 9 P

	Nature	CM	TD	TP	Crédits
UE Asymmetric synthesis	Teaching Unit (UE)	36h	4,5h		6 credits
UE Synthetic strategies	Teaching Unit (UE)	36h	4,5h		6 credits
UE Heterocyclic chemistry	Teaching Unit (UE)	27h	3h		3 credits
UE Développement chimique	Teaching Unit (UE)	18h	15h		3 credits
UE Green chemistry	Teaching Unit (UE)	36h	4,5h		3 credits
UE Chimie médicinale et Médicaments	Teaching Unit (UE)	22,5h	4,5h		3 credits
UE Entrepreneurship and Sciences	Teaching Unit (UE)	36h			3 credits
UE Molecular modelling	Teaching Unit (UE)	12h		9h	3 credits
UE Outils pour l'ingénieur	Teaching Unit (UE)	38h			3 credits
UE Entrepreneurship and Sciences	Teaching Unit (UE)	14h	10h		3 credits

Semester 9 R

	Nature	CM	TD	TP	Crédits
UE Asymmetric synthesis	Teaching Unit (UE)	36h	4,5h		6 credits
UE Synthetic strategies	Teaching Unit (UE)	36h	4,5h		6 credits
UE Heterocyclic chemistry	Teaching Unit (UE)	27h	3h		3 credits
UE Green chemistry	Teaching Unit (UE)	36h	4,5h		3 credits
UE Molecular modelling	Teaching Unit (UE)	12h		9h	3 credits
UE Chimie médicinale et Médicaments	Teaching Unit (UE)	22,5h	4,5h		3 credits
UE Développement chimique	Teaching Unit (UE)	18h	15h		3 credits
UE Bio-targeted chemistry 1	Teaching Unit (UE)	20h			3 credits
UE Outils pour l'ingénieur	Teaching Unit (UE)	38h			3 credits
UE Entrepreneurship and Sciences	Teaching Unit (UE)	14h	10h		3 credits

Semester 10 P

	Nature	CM	TD	TP	Crédits
UE Internship	Teaching Unit (UE)				27 credits
UE English	Teaching Unit (UE)		24h		3 credits
UE ETC	Teaching Unit (UE)				3 credits

Semester 10 R

	Nature	CM	TD	TP	Crédits
UE Internship	Teaching Unit (UE)				27 credits

UE English	Teaching Unit (UE)	24h	3 credits
UE ETC	Teaching Unit (UE)		3 credits
UE Internship	Teaching Unit (UE)		24 credits
UE Ecole d'été - Graduate school EUR CBS	Teaching Unit (UE)		3 credits