Study programmes 2014-2015

Faculty of Sciences

Master in Chemical Sciences, in-depth approach

First Year

Compulsory courses

		Or	Th	Pr	Au	Cr
CHIM0213-2	*Structural analysis* (english language) - Christian DAMBLON, Edwin DE PAUW	Q1	45	-	-	**4**
CHIM0609-1	*Advanced organic chemistry* - André LUXEN		30	-	-	**4**
CHIM0635-1	*Advanced physical chemistry* (english language) - Bernard LEYH	Q1	30	-	-	**4**
CHIM0636-1	*Macromolecular physical chemistry* (english language) - Christine JÉRÔME	Q1	30	-	-	**4**
CHIM0637-1	*Chemistry of materials* (english language)	TA				**4**
	- Inorganic materials - Bénédicte VERTRUYEN	20	-	-		
	- Organic and biological materials - AnneSophie DUWEZ	20	-	-		
BIOC0232-1	*Macromolecular biochemistry* (english language) - Moreno GALLENI	Q1	30	30	-	**4**
CHIM0638-1	*Surfaces and interfaces* (english language) - AnneSophie DUWEZ	Q1	15	-	-	**2**
CHIM9219-1	*Theoretical and quantum chemistry* (english language) - Françoise REMACLE - [15h QA Sess.]	Q1	30	15	[+]	**4**
CHIM0096-1	*Nuclear chemistry* (english language) - André LUXEN		15	-	-	**2**
CHIM0645-1	*Integrated research project in laboratory (including group projects and bibliography)* - AnneSophie DUWEZ	TA	-	-	-	**14**

Optional courses

Choose courses totalling 14 ECTS from the following :

CHIM0081-3	*Industrial Chemistry Processes, structure of chemical industry* - Angélique LÉONARD - [1d FW]	Q1	30	-	[+]	**4**
BIOL0114-4	*Electronic microscopies* - Philippe COMPÈRE	Q2	15	-	-	**2**
CHIM9236-1	*Microstructure of Materials : characterization techniques* - Catherine HENRIST		15	-	-	**2**
CHIM9264-1	*Electrical and magnetic properties of materials* - Bénédicte VERTRUYEN	Q1	15	-	-	**2**
CHIM0642-1	*Molecular dynamics and photochemistry* - Bernard LEYH	Q2	30	-	-	**4**
BIOC0719-1	*Enzymology* - André MATAGNE	Q2	15	-	-	**2**
CHIM9259-2	*Analytical techniques in forensic chemistry* - JeanFrançois FOCANT	Q2	15	-	-	**2**
CHIM0218-1	*Elements of medicinal chemistry* - Bernard PIROTTE		15	-	-	**2**
CHIM9265-1	*Introduction to continuous flow organic synthesis* (english language) - JeanChristophe MONBALIU - [1d Vis.]	Q2	15	10	[+]	**4**
AESS0255-1	*Introduction to chemistry didactics* - Bernard LEYH	Q1	15	-	-	**2**

Second Year

General courses

CHIM9227-1	*Quantum Chemistry* (english language) - Françoise REMACLE	Q1	30	10	-	**4**
PHYS3003-1	*Functional Materials : theory and modeling* (english language) - Philippe GHOSEZ		20	10	-	**4**
CHIM9228-1	*Macromolecular Chemistry* (english language) - Christine JÉRÔME	Q1	20	15	-	**4**
CHIM9256-1	*Advanced solid state chemistry* - Bénédicte VERTRUYEN	Q1	30	-	-	**4**
CHIM9230-1	*Nanomaterials, (electro)synthesis and applications* (english language) - Christophe DETREMBLEUR, Christine JÉRÔME	Q1	30	-	-	**4**

Specialised courses, including tutorial and practice

Courses totaling 13 ECTS have to be chosen among :

PHYS3014-1	*Physics and chemistry of materials : complements* - COLLÉGIALITÉ	Q1	20	-	-	**2**
PHYS3004-1	*Nanomaterials : theory and modeling* (english language) - JeanYves RATY	Q1	20	10	-	**4**
PHYS3015-1	*Electronic and vibrational spectroscopies* - Matthieu VERSTRAETE		15	15	-	**4**
CHIM9231-1	*Characterization of Biomaterials* (english language) - Edwin DE PAUW, MarieClaire GILLET	Q1	15	15	-	**4**
CHIM9232-1	*Biohybrids: theory and modeling* (english language) - Françoise REMACLE	Q1	30	-	-	**4**
CHIM9233-1	*Molecular logic* (english language) - Françoise REMACLE	Q1	15	-	-	**2**
CHIM9234-1	*Polymers and environment* - Philippe LECOMTE		15	-	-	**2**

CHIM9257-1	*Introduction to solid state NMR* - Christian DAMBLON, Philippe LECOMTE, Bénédicte VERTRUYEN		15	-	-	**2**
CHIM9266-1	*Characterization of nanostructures by scanning probe techniques* (english language) - AnneSophie DUWEZ	Q1	15	-	-	**2**
PHYS3016-1	*Physical characterization of materials and interfaces* (english language) - Ngoc Duy NGUYEN	Q1	15	15	-	**4**
PHYS0096-1	*Physics of superconductors* - Alejandro SILHANEK	Q1	30	-	-	**4**
PHYS3023-1	*Theory of magnetism* (english language) - Eric BOUSQUET		20	10	-	**4**

Compulsory courses

CHIM0651-1	*Seminars (all fields of chemistry)* - AnneSophie DUWEZ	TA	-	-	-	**2**
SMEM0016-1	*Final thesis* - COLLÉGIALITÉ	TA	-	-	-	**20**

Optional courses

Choose, with the accord of the Jury, courses to a total of 8 credits from the list below or from othe Ulg Masters programmes or from outside the Ulg.

Synthesis and materials

CHIM0707-1	*Physical organic chemistry* - JeanChristophe MONBALIU	Q2	15	-	-	**2**
CHIM0246-1	*New reactions in organic synthesis* - Albert DEMONCEAU	TA	15	-	-	**2**
CHIM0656-1	*Organometallic Catalysis* - Lionel DELAUDE	TA	15	-	-	**2**
CHIM0219-1	*Industrial polymers* - Christine JÉRÔME	Q2	15	-	-	**2**
CHIM0659-1	*Polymers and Environment* - Philippe LECOMTE, Jutta RIEGER		15	-	-	**2**
CHIM9260-1	*Properties and applications of surfactants* - Guy BROZE, Antoine DEBUIGNE	Q2	15	-	-	**2**
CHIM0248-1	*Advanced ceramic materials : synthesis, characterization and use* - Rudi CLOOTS		15	-	-	**2**
CHIM0088-1	*Nanomaterials, principles of synthesis and application* - Christophe DETREMBLEUR	Q1	15	-	-	**2**
CHIM0654-1	*Molecular devices and molecular machines* - AnneSophie DUWEZ	Q2	15	-	-	**2**

Techniques of characterization and analysis

CHIM0220-1	*Recent nuclear magnetic resonance (NMR) methods in chemistry* - Christian DAMBLON	Q1	15	-	-	**2**
CHIM9261-1	*Introduction to NMR in solid phase* - Christian DAMBLON, Philippe LECOMTE, Bénédicte VERTRUYEN		15	-	-	**2**
CHIM9221-1	*Advanced techniques in nuclear magnetic resonance of biomolecules* - Christian DAMBLON		15	-	-	**2**
CHIM0653-1	*Imaging and marking techniques* - André LUXEN		15	-	-	**2**
CHIM0655-1	*Advanced mass spectrometry methods* - Edwin DE PAUW	TA	15	-	-	**2**
CHIM0657-1	*Emerging techniques in the science of separation* - JeanFrançois FOCANT	Q2	15	-	-	**2**
CHIM0248-1	*Advanced ceramic materials : synthesis, characterization and use* - Rudi CLOOTS		15	-	-	**2**
CRIS0204-1	*Complement of crystallography* - Frédéric HATERT	Q2	15	-	-	**2**
CHIM0693-1	*Major instruments for studying the subject* - Raphaël HERMANN - [2d Vis.]	Q2	10	10	[+]	**2**

Biological chemistry

CHIM9221-1	*Advanced techniques in nuclear magnetic resonance of biomolecules* - Christian DAMBLON		15	-	-	**2**
CHIM0655-1	*Advanced mass spectrometry methods* - Edwin DE PAUW	TA	15	-	-	**2**
CHIM9262-1	*Biomimetic chemistry : when the Man is inspired by nature* - Loïc QUINTON	Q2	15	-	-	**2**

Modelling and molecular dynamics

CHIM0707-1	*Physical organic chemistry* - JeanChristophe MONBALIU	Q2	15	-	-	**2**
CHIM0654-1	*Molecular devices and molecular machines* - AnneSophie DUWEZ	Q2	15	-	-	**2**
CHIM0090-1	*Theory and modeling of hybrid molecular complexes* - Françoise REMACLE	Q1	15	-	-	**2**
CHIM0089-1	*Molecular logic* - Françoise REMACLE	Q1	15	-	-	**2**
CHIM0231-1	*Chemical reaction dynamics : experimental approaches* - Bernard LEYH	TA	15	-	-	**2**
SPAT0054-1	*Astrophysics and astrochemistry* - Michaël DE BECKER	Q2	15	5	-	**2**

Programme of courses for other masters degrees

[...]	Programme of courses of other Master in the ULg and out of the ULg					

Compulsory courses

CHIM0646-1	*Physical chemistry of nanostructures* (english language) - AnneSophie DUWEZ	Q1	15	-	-	**2**
CHIM0647-1	*Coordination Chemistry and Catalysis* - Lionel DELAUDE	Q1	30	-	-	**4**
CHIM0648-1	*Chemometrics and quality systems* (english language) - JeanFrançois FOCANT	Q2	15	-	-	**2**

CHIM0649-1	*Molecular Modelling* - Françoise REMACLE	Q1	20	-	-	**3**
CHIM0650-1	*Structural biologial chemistry* (english language) - Christian DAMBLON		30	-	-	**4**
CHIM9220-1	*Introduction to research* - AnneSophie DUWEZ	TA	-	-	-	**2**
STRA0027-1	*Final thesis complement* - COLLÉGIALITÉ		-	-	-	**9**
STRA0037-1	*Final thesis monitoring* - COLLÉGIALITÉ		-	-	-	**4**