

Master of Chemistry - CHEMISTRY & LIFE SCIENCES (C&LS) track

Course Title	Instructor	Institution	Credits	Year	Language
─ Mandatory courses					
Current Challenges at the C&LS Interface	G. Gasser	PSL	6	M1 & M2*	En
Master C&LS Seminar Series		PSL	3	M1 & M2	En
Research design & Project Conception		PSL	6	M2	En
─ Fundamentals in Chemistry & Biology					
<u>Chemistry</u>					
Advanced selective organic synthesis	C. Meyer	ESPCI Paris	2	M1 or M2	En
Analytical and biological chemistry <i>includes: Bioinorganic chemistry (2ECTS)</i> <i>Basic concepts in cellular biology and enzymology (2ECTS)</i> <i>Modern analytical chemistry for biotechnology and medical diagnostics (2ECTS)</i> <i>Bioimaging (2ECTS)</i>	G. Gasser G. Gasser	Chimie ParisTech	8	M1 or M2	En
Applied statistics & Chemometrics <i>includes: Applied Statistics (1.5 ECTS)</i> <i>Chemometrics (1.5 ECTS)</i>	I. Rivals & J. Vial	ESPCI Paris	3	M1 or M2	En
Biophysical chemistry	L. Jullien	ENS Chemistry	6	M1 or M2	En
Colloids and biomolecules	J. Bibette	ESPCI Paris	1.5	M1 or M2	En
From bio-inorganic chemistry to metal supramolecular chemistry	C. Polcar	ENS Chemistry	4	M1 or M2	En
Fundamentals of biochemistry	O. Ploux	Chimie ParisTech	2	M1 or M2	Fr
Nuclear Magnetic Resonance	G. Bodenhausen	ENS Chemistry	4	M1 or M2	En
Organic chemistry I	J.-B. Baudin	ENS Chemistry	6	M1	Fr
Organic chemistry II		ENS Chemistry	6	M1	Fr
Synthetic Methods in Molecular Chemistry	R. Nicolaÿ & A. Guérinot	ESPCI Paris	3	M1 or M2	En
<u>Biology</u>					
Cell Biology I	A. Dumoulin	ENS Biology	3	M1	Fr
Cellular and molecular oncology	H. De The	Collège de France	3	M1 or M2	Fr
Cellular ecosystems: from modeling to medicine	F. Devaux	ENS Biology	3	M1 or M2	En
Cellular genetics and physiology	C. Petit	Collège de France	3	M1 or M2	Fr
Data Analysis	M.A. Dillès	ENS Biology	3	M1 or M2	En
Dynamics of living matter	T. Lecuits	Collège de France	3	M1 or M2	Fr
Epigenetics and cellular memory	E. Heard	Collège de France	3	M1 or M2	Fr
Epigenetics: from biological phenomena to molecular mechanism	D. Bouyer, V. Colot, B. Despres	ENS Biology	6	M1 or M2	En
Frontiers in microbial systems	A. Lebreton & G. Tran Van Nhieu	ENS Biology	3	M1 or M2	En
Microbiology and infectious diseases	P. Sansonetti	Collège de France	3	M1 or M2	Fr
Molecular biology & genetics	G. Lepère	ENS Biology	6	M1	Fr
Morphogenetic processes	A. Prochiantz	Collège de France	3	M1 or M2	Fr
Neuropharmacology	L. Mony	ENS Biology	3	M1 or M2	En
─ Chemical and biological engineering for biotechnology and sustainable chemistry					
Basics in biomaterial Science	L. Corté	Mines ParisTech / BME-Paris	3	M2	En
Biointerfaces	A. Galtayries	Chimie ParisTech / BME-Paris	3	M1 or M2	En
Chemical biology	A. Gautier	ENS Chemistry	3	M1 or M2	En
Chemical Probes and Drug Discovery	P. Arimondo	PSL (via Institut Pasteur)	3	M1 or M2	En
Chemistry of biological processes	M. Fontecave	Collège de France	3	M1 or M2	Fr
Chemistry of hybrid materials	C. Sanchez	Collège de France	3	M1 or M2	Fr
Les médicaments issus des biotechnologies	P. Bigey	Chimie ParisTech	6	M1 or M2	Fr
Médicaments : des robots et des hommes	O. Ploux & C. Girard	Chimie ParisTech	6	M1 or M2	Fr
Microbiologie appliquée et bioprocédés	M. Minier	Chimie ParisTech	6	M1 or M2	Fr
Molecular Biotechnology	A. Griffiths	ESPCI Paris	2	M1 or M2	En
Principles in tissue engineering	L. Corté	Mines ParisTech / BME-Paris	3	M2	En
Science et ingénierie des matériaux pour la santé	L. Corté	Mines ParisTech	2	M1 or M2	Fr
Synthetic biology	V. Stoven	Mines ParisTech	1	M1 or M2	Fr
Systems and synthetic biology	P. Nghe	ESPCI Paris	4.5	M1 or M2	En
Towards innovative treatments with old molecules	S. Hermann	ENS Biology	3 or 6	M1 or M2	En
Valorisation des bioressources	C. Thomas, C. Rober, M. Minier F. de Montigny	Chimie ParisTech	6	M1 or M2	Fr
─ Modeling approaches and analytical tools for the study of biological systems					
Big data	L. Zdeborova & O. Rivoire	ESPCI Paris	2	M1 or M2	En
Bioanalytics, complex samples and miniaturisation	V. Pichon	ESPCI Paris	1.5	M1 or M2	En
Biophysics	U. Bockelmann	ESPCI Paris	2	M1 or M2	En
Conformational dynamics of proteins	F. Ferrage	ENS Chemistry	2	M1 or M2	En
Genomics and bioinformatics	C. A. Azencott & T. Walter	Mines ParisTech	3	M1 or M2	En
Medical imaging	E. Bossy	ESPCI Paris	1.5	M1 or M2	En
NMR imaging	G. Bodenhausen	ENS Chemistry	2	M1 or M2	En
Optical microscopy	S. Dieudonné	ENS Biology	3 or 6	M1 or M2	En
Physicochimie analytique pour la bioanalyse et l'environnement	A. Varenne	Chimie ParisTech	2	M1 or M2	Fr
Principles and applications of Fluorescence Microscopy (limited access)		Institut Pasteur		M2	En
Statistical mechanics for complex chemical and biochemical systems	D. Laage	ENS Chemistry	6	M1 or M2	En