

MASTER OF SCIENCE IN CHEMISTRY
Effective SY 2017-2018

FIRST YEAR

First Semester

Course Code		Descriptive Title	Units			Pre-requisite/s
			Lec	Lab	Total	
Ch	101	Advanced Inorganic Chemistry	3	0	3	A semester of undergraduate Inorganic Chemistry course. One semester of undergraduate Physical Chemistry course(s) that covers basic concepts in quantum chemistry. A semester of Analytical instrumentation course.
Ch	102	Advanced Organic Chemistry	2	1	3	10 units of Organic Chemistry
Ch	301	Research Methods	1	0	1	
Ch	104	Advanced Analytical Chemistry	2	1	3	10 units of Analytical Chemistry
Ch	229	Metrology	1	0	1	
Ch	302	Readings & Seminar I	1	0	1	
TOTAL			10	2	12	

Second Semester

Course Code		Descriptive Title	Units			Pre-requisite/s
			Lec	Lab	Total	
Ch	103	Advanced Biological Chemistry	2	1	3	10 units of Organic Chemistry and 3 units of Basic Biochemistry
Ch	105	Advanced Physical Chemistry	2	1	3	Two semesters of undergraduate Physical Chemistry covering thermodynamics, kinetics and basic quantum chemistry. A semester of Physical Chemistry laboratory. Mathematical analysis (differential and integral calculus)
Ch	Elec	Elective on the field of specialization	2	1	3	Depends on the field of specialization
Ch	Elec	Elective on the field of specialization	3	0	3	
Ch	303	Readings & Seminar II	1	0	1	Ch302
Ch	300	Comprehensive Examination the field of specialization	0	0	0	
TOTAL			10	3	13	

Summer

Course Code		Descriptive Title	Units			Pre-requisite/s
			Lec	Lab	Total	
Ch	Elec	Elective on the field of specialization	1	2	3	Depends on the field of specialization
Ch	231	Entrepreneurial Thinking (required but not credited)	1	0	(1)	All core courses
Ch	401	MS Thesis Proposal	1	0	1	Ch300, Ch302
TOTAL			2	2	4	

SECOND YEAR

First Semester

Course Code		Descriptive Title	Units			Pre-requisite/s
			Lec	Lab	Total	
Ch	402	MS Thesis	0	3	3	Ch401
TOTAL			0	3	3	

Second Semester

Course Code		Descriptive Title	Units			Pre-requisite/s
			Lec	Lab	Total	
Ch	402	MS Thesis	0	3	3	Ch401
Ch	403	MS Thesis Defense	1	0	1	Ch402
TOTAL			1	3	4	

Note: Elective courses should be specified below, if applicable.

Course Code		Descriptive Title	Course Code		Descriptive Title
Ch	201	Advanced Environmental Chemistry	Ch	223	Enzyme Chemistry
Ch	202	Advanced Food Chemistry	Ch	224	Heterocyclic Chemistry
Ch	203	Advanced Polymer Chemistry	Ch	225	Industrial Chemical Processes
Ch	204	Advanced Quantum Chemistry	Ch	226	Internship in Industry
Ch	205	Advanced Spectroscopy	Ch	227	Materials Chemistry
Ch	206	Advanced Thermodynamics	Ch	228	Medicinal Chemistry (Nat Prod)
Ch	207	Agricultural Chemistry	Ch	229	Metrology
Ch	208	Applied Analytical Science	Ch	230	Modern Instrumental Analysis
Ch	209	Applied Microbiology	Ch	231	Entrepreneurial Thinking
Ch	210	Biochemical Catalysis	Ch	232	Organic Synthesis
Ch	211	Bioinorganic Chemistry	Ch	233	Organometallic Chemistry
Ch	212	Biophysical Chemistry	Ch	234	Petroleum Chemistry
Ch	213	Biotechnology and Molecular Biology	Ch	235	Polymer Synthesis and Characterization
Ch	214	Carbohydrate Chemistry	Ch	236	Protein Chemistry
Ch	215	Chemical Bonding	Ch	237	Reaction Mechanism
Ch	216	Chemical Kinetics	Ch	238	Stereochemistry
Ch	217	Chemistry of Fats and Lipids	Ch	239	Special Topics in Analytical Chemistry
Ch	218	Chemistry of Nucleic Acids	Ch	240	Special Topics in Biochemistry
Ch	219	Chromatographic Methods of Analysis	Ch	241	Special Topics in Inorganic Chemistry
Ch	220	Computational Chemistry	Ch	242	Special Topics in Natural Products
Ch	221	Coordination Chemistry	Ch	243	Special Topics in Organic Chemistry
Ch	222	Electroanalytical Chemistry	Ch	244	Special Topics in Physical Chemistry