

NEW CURRICULUM

GRADUATE PROGRAMS IN CHEMISTRY

PROFESSIONAL MASTER'S DEGREE

Number of credits required in the Master's Degree **40**
Credits in mandatory subjects **depend on each area**
Credits in subjects of the area of concentration **depend on each area**
Credits in optional subjects **depend on each area**

Number of credits obtained in the defense of the Master's Thesis **60**

ACADEMIC MASTER'S DEGREE

Number of credits required in the Master's Degree **50**
Credits in mandatory subjects **depend on each area**
Credits in subjects of the area of concentration **depend on each area**
Credits in optional subjects **depend on each area**

Number of credits obtained in the defense of the Master's Thesis **50**

DOCTORATE DEGREE COURSE

Number of credits required in the Doctorate Course **70**
Credits in mandatory subjects **depend on each area**
Credits in subjects of area of concentration **depend on each area**
Credits in optional subjects **depend on each area**

Number of credits obtained in the defense of the Doctorate Dissertation **130**

PROFESSIONAL MASTER'S DEGREE SUBJECTS

CHEMISTRY EDUCATION AREA

Course Structure:

- 3 mandatory subjects in the area of Chemistry Education;
- 1 specific subject of the course: Preparation of the Professional Project (evaluation: defense of this project before the examining committee). The syllabus is unique, but the topics are flexible.
- optional subjects - selected jointly by the student and supervisor according to the specific interests of the project;

Subject Info	Token	Subject	Term	Credits
AC	QUI.401	Professional Project Preparation	1 st /2014	10
AC	QUI.402	Fundamentals of Chemistry A	1 st /2014	10
AC	QUI.403	Fundamentals of Chemistry B	1 st /2014	10
AC	QUI.404	Methodological Foundations of Chemistry Education	1 st /2008	10
OP	QUI.405	Theories of Learning	1 st /2008	04
OP	QUI.406	Elements and Strategies for Teaching Chemistry	1 st /2008	04
OP	QUI.407	Fundamentals of Chemistry C	1 st /2014	10
OP	QUI.400 -x/xx	Topics in Chemistry Teaching	Changeable	Changeable

TECHNOLOGICAL CHEMISTRY AREA

Course Structure:

- 1 mandatory subject in the area of Technological Chemistry;
- 1 specific subject of the course: Preparation of the Professional Project (evaluation: defense of this project before the examining committee). The syllabus is unique, but the topics are flexible.
- 1 optional subject - selected jointly by the student and supervisor according to the specific interests of the project;

Subject Info	Token	Subject	Term	Credits
AC	QUI.601	Professional Project Preparation	1 st /2008	14
AC	QUI.602	Advanced Chemistry	1 st /2008	13
OP	QUI.600 -x/xx	Topics in Chemistry - Technological Character	Changeable	Changeable

ACADEMIC MASTER'S DEGREE AND DOCTORATE DEGREE COURSE SUBJECTS

GENERAL MANDATORY SUBJECTS

Subject Info	Token	Subject	Term	Credits
O*	QUI.003	Supervised Internship and Teacher Training Practice in Chemistry 1	2 nd /1999	6
O*	QUI.004	Supervised Internship and Teacher Training Practice in Chemistry 2	2 nd /1999	6
O	QUI.005	Science with Quality: The Importance of Good Practices Mandatory subject for all areas of Master's and Doctorate courses, valid for students starting from 1st/2016	1 st /2016	1
O	--	Didactic and Research Seminars (Subject mandatory for Academic Master's and Doctorate Courses)	1 st /1998	--
O	--	Safety and First Aid Subject (Mandatory for Master's Degree and Doctorate courses)	2 nd /2006	--

According to CAPES, the doctorate students (granted CAPES scholarship) no longer need to study two PESCDS, once the minimum duration will be one semester. That ordinance is valid for incoming students onwards 05/2006.

CHEMISTRY AREA SUBJECTS

Master's Degree => The student must attend two mandatory subjects in any concentration area and the subject QUI.005

Doctorate Course => The student must attend two mandatory subjects in any concentration area and the subject QUI.005

Subject Info	Token	Subject	Term	Credits
OP	QUI.201	Methodology of Education in Chemistry	1 st /2008	13
OP	QUI.200- x/xx	Topics in Chemistry	Changeable	Changeable

PHYSICAL CHEMISTRY AREA SUBJECTS

Subject Info	Token	Subject	Term	Credits
AC	QUI.301	Chemical Kinetics (Mandatory Subject for Master's and Doctorate Degree)	1 st /2008	13
AC	QUI.302	Quantum Chemistry 1 (Mandatory Subject for Master's and Doctorate Degree)	1 st /2008	13
AC	QUI.303	Chemical Thermodynamics (Mandatory Subject for Master's and Doctorate Degree)	1 st /2008	13
OP	QUI.321	Advanced Electrochemistry	1 st /2008	13
OP	QUI.324	Corrosion Fundamentals	1 st /2008	13
OP	QUI.341	Quantum Chemistry 2	1 st /2008	13
OP	QUI.391	Statistical Thermodynamics	1 st /2008	13
OP	QUI.300-x/xx	Physical Chemistry Topics	Changeable	Changeable
ANALYTICAL CHEMISTRY AREA SUBJECTS				
Subject Info	Token	Subject	Term	Credits
AC	QUI.901	Analytical Aspects of Chemical Solutions (Mandatory Subject for Master's and Doctorate Degree)	1 st /2008	13
AC	QUI.902	Environmental Chemistry 1 (Mandatory Subject for Master's and Doctorate Degree)	1 st /2008	13
AC	QUI.903	Analytical Aspects of Electro analytical Chemistry 1 (Mandatory Subject for Doctorate Degree)	1 st /2008	13
AC	QUI.904	Optical Methods Applied to Trace Determination (Mandatory Subject for Doctorate Degree)	1 st /2008	13
OP	QUI.931	Some Aspects of Electro analytical Chemistry 2	1 st /2008	13
OP	QUI.932	Chemical Sensors	1 st /2008	13
OP	QUI.961	Continuous Flow Analysis	1 st /2008	13
OP	QUI.900-x/xx	Analytical Chemistry Topics	Changeable	Changeable
ORGANIC CHEMISTRY AREA SUBJECTS				
Subject Info	Token	Subject	Term	Credits
AC	QUI.501	Advanced Organic Chemistry (Mandatory Subject for Master's and Doctorate Degree)	2 nd /2011	13
AC	QUI.502	Mechanism of Organic Reactions (Mandatory Subject for Master's and Doctorate Degree)	2 nd /2011	13
OP	QUI.503	Advances in Spectroscopy for Identification of Chemical Substances	2 nd /2011	13
OP	QUI.521	RMN – Theoretical Approach/ Modern Practice	2 nd /2011	13
OP	QUI.522	Development of HPLC Methods: Fundamentals, Strategies and Validation	2 nd /2011	13
OP	QUI.541	Organic Synthesis Methodology	2 nd /2011	13
OP	QUI.542	Organic Synthesis	2 nd /2011	13
OP	QUI.543	Organometallic in Organic Synthesis	2 nd /2011	13

OP	QUI.561	Chemistry of Secondary Natural Products	2 nd /2011	13
OP	QUI.572	Natural Bioactive Products	2 nd /2011	13
OP	QUI.500- x/xx	Organic Chemistry Topics	Changeable	Changeable
INORGANIC CHEMISTRY AREA SUBJECTS				
Subject Info	Token	Subject	Term	Credits
AC	QUI.701	Advanced Inorganic Chemistry (Mandatory Subject for Master's and Doctorate Degree)	1 st /2008	13
AC	QUI.702	Physical Methods in Inorganic Chemistry (Mandatory Subject for Master's and Doctorate Degree)	1 st /2008	13
OP	QUI.742	Homogeneous Catalysis	1 st /2008	13
OP	QUI.743	Heterogeneous Catalysis	1 st /2008	13
OP	QUI.761	Chemistry of Coordination	1 st /2008	13
OP	QUI.765	Crystal Physics	1 st /2008	13
OP	QUI.700- x/xx	Topics in Inorganic Chemistry	Changeable	Changeable