



Subject Description

1. Program information

1.1. Institution	University of Craiova
1.2. Faculty	Science
1.3. Department	Chemistry
1.4. Study field	Chemistry
1.5. Study level	Master
1.6. Type of education	full-time
1.7. Study program	Advanced Chemistry

2. Subject information

2.1. Subject	Drugs and drug precursors						
2.2. Course coordinator	Lect.dr. Mădălina Drăgoi						
2.3. Application coordinator	Lect.dr. Mădălina Drăgoi						
2.4. Year of study	II	2.5. Semester	3	2.6. Type of evaluation	E	2.7. Subject type	DS/DOB

3. Total estimated time (hours/semester)

3.1. Number of hours per week	4	from which: 3.2 course	2	3.3. seminar/lab	2
3.4. Total hours in curriculum	56	from which: 3.5 course	28	3.6. seminar/lab	28
Time allocation – hours/week					
Study using textbooks, course materials, bibliographies, and notes					30
Additional documentation in the library, on specialized electronic platforms, and in the field					25
Preparation of seminars/labs, assignments, reports, portfolios, and essays					25
Tutoring					10
Examinations					4
Other activities.....					
3.7. Total hours of individual study					94
3.8. Total hours per semester					150
3.9. Number of ECTS					6

4. Preconditions (if the case)

4.1. of curriculum	•
4.2. of competences	•

5. Conditions (if the case)

5.1. for course	• Lecture hall equipped with computer, video projection system, and internet connection
5.2. for labs	• Laboratory equipped with the materials, equipment, and reagents necessary to carry out experimental work

6. Course objectives - expected learning outcomes achieved by completing and passing the course

Knowledge	<ol style="list-style-type: none"> 1. Graduates define, understand, explain, and apply advanced knowledge of chemistry from specialized literature in practice. 2. Graduates select and use appropriate experimental and theoretical methodologies to investigate complex scientific problems, assessing their impact on the environment and society. 3. Graduates write analysis and scientific reports, presenting the results of their research and experiments, in line with professional ethics and standards.
Skills	<ol style="list-style-type: none"> 1. Graduates apply major concepts in analytical, inorganic, organic, and physical chemistry to chemical practice. 2. Graduates evaluate and analyze experimental techniques to conduct and design experiments, analyze and test (qualitatively and quantitatively) chemical elements and substances; design, coordinate, and conduct chemical experiments. 3. Graduates apply critical thinking, following the structure and principles of scientific writing to develop and present scientific reports.
Responsibility and autonomy	<ol style="list-style-type: none"> 1. Graduates are able to adapt major scientific concepts in the field of chemistry to conduct research, improve or develop new concepts, knowledge, theories, and operational methods, products, and services in order to apply them in specific activities for product and process quality control. 2. Graduates use classical laboratory instruments/techniques and modern equipment independently, design experiments, and interpret and analyze the obtained results accurately. They design learning situations focused on developing experimental techniques and methods specific to chemical laboratories. 3. Graduates prepare and present scientific reports in line with ethical standards for collecting and interpreting results.

7. Table of contents

7.1. COURSE	Mode of operation	Teaching methods	Allocated time (hours)
1. Introductory Notions About Drugs: Definitions, Classification	On site (week 1)	Lecture, explanation and interactive presentation, heuristic conversation, problem solving	2
2. Spectral Methods for Drug Analysis	On site (weeks 2-3)	Lecture, explanation and interactive presentation, heuristic conversation, problem solving	4
3. Legal Drugs. Alcohol, Caffeine, Nicotine	On site (weeks 4-5)	Lecture, explanation and interactive presentation, heuristic conversation, problem solving	4
4. Legal Drugs. Opioids: Morphine, Codeine, Thebaine	On site (weeks 6-7)	Lecture, explanation and interactive presentation, heuristic conversation, problem solving	4
5. Legal Drugs. Benzodiazepines	On site (weeks 8-11)	Lecture, explanation and interactive presentation, heuristic conversation, problem solving	8
6. Illicit Drugs: - naturally occurring: cocaine, hashish/marijuana, psilocybin/psilocin, mescaline - semi-synthetic and synthetic: heroin, LSD, amphetamines, barbiturates, PCP, oxycodone	On site (week 12-14)	Lecture, explanation and interactive presentation, heuristic conversation, problem solving	6
References:			

1. Iovu M., Droguri legale, Editura Monitorul Oficial, București, 2003
2. Iovu M., Droguri ilegale, Editura Monitorul Oficial, București, 2013
3. Castiglioni S., Zuccato E., Fanelli R., Illicit Drugs in the Environment: Occurrence, Analysis, and Fate Using Mass Spectrometry, John Wiley & Sons, Inc., 2011
4. Lecture notes, 2025

7.2. Lab	Mode of operation	Teaching methods	Allocated time (hours)
1. Safety rules in Drugs and drug precursors lab	On site (week 1-2)	Experiment, explanation, discussion, debate, and questioning	4
2. Determination of Ethanol in Alcoholic Beverages.	On site (week 3-4)	Experiment, explanation, discussion, debate, and questioning	4
3. Caffeine Extraction and Separation	On site (week 5-6)	Experiment, explanation, discussion, debate, and questioning	4
4. Extraction of Alkaloids from Poppy Seeds.	On site (weeks 7-8)	Experiment, explanation, discussion, debate, and questioning	4
5. Determination of Physical Properties of Drug Substances (melting point, solubility)	On site (week 9-10)	Experiment, explanation, discussion, debate, and questioning	4
6. Infrared Spectroscopic Identification of Drugs	On site (week 11-12)	Experiment, explanation, discussion, debate, and questioning	4
7. Lab Verification	On site (week 13-14)	Experiment, explanation, discussion, debate, and questioning	4
References:			
1. Lab work presentations, 2025.			

8. Correlation of the discipline content with the expectations of representatives of the epistemic community, professional associations, and representative employers in the field related to the program

The content of the course is in line with those of similar courses at universities in Romania and abroad, while also meeting the expectations of professional associations and representative employers in the field.

9. Evaluation

Activity	9.1. Evaluation criteria	9.2. Evaluation method	9.3. Contribution to final score
9.4. Course	theoretical concepts and mechanisms, critical analysis of literature or design of a drug	Written Exam	50%
		Portofolio	20%
9.5. Lab	extraction, characterization, data interpretation	Project Work	30%
9.6. Minimum performance standard			

- Basic understanding of core concepts.
- Knowledge of main types of legal and illicit drugs.
- Elementary understanding of drugs extraction methods.
- Simple correlation between structure and biological activity.
- Completion of practical/project tasks

Date
22.09.2025

Course coordinator,
Lect.dr. Mădălina Drăgoi

Date of approval
25.09.2025

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Head of Department,
Conf.dr. Nicoleta Cioateră