UNIVERSITY OF IOANNINA

DEPARTMENT OF CHEMISTRY
ACADEMIC CATALOGUE 2019 - 2020

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I. INTRODUCTION

The Chemistry Department of the University of Ioannina was founded in 1976. A four year study in the Chemistry Department leads to the degree in Chemistry. There are 956 active undergraduate students, 295 graduate students and 106 Ph.D. canditates enrolled in the Chmistry Department. There are presently three graduate study programs in operation: the departmental graduate program in Chemistry and two other interdepartmental graduate programs managed by the Chemistry Department.

The Academic catalogue in hand comprises a usefull tool providing information on the structure and operation of the Chemistry Department, the contents of both undergraduate and graduate studies. It includes a complete list of all undergraduate and graduate courses offered, course instructors, and academic credits (ECTS) assigned to each course.

It also includes information on Departmental administration, contact information and electronic addresses.

Departmental faculty members and staff include: 47 faculty members (24 full Professors, 15 Associate Professors, 8 Assistant Professors, 7 Emeritus Professors and 21 technical staff members (15 EDP, 3 ETEP and 3 IDACH)

II. STRUCTURE AND ADMINISTRATION OF THE CHEMISTRY DEPARTMENT

The Chemistry Department comprises the functional unit covering the discipline of Chemistry. Fulfillment of the academic program of the Chemistry Department leads to the degree (Ptychion) in Chemistry. The structure of the Chemistry Department includes Sections and Laboratories. Each Section is responsible for teaching a specific area within the discipline of Chemistry. The Chemistry Department is made up of undergraduate and graduate students, Ph. D. candidates, faculty members and technical staff (EDIP, ETEP and IDACH). Faculty members belong to three ranks: Full Professors, Associate Professors and Assistant Professors. Administrative officers/bodies of the Chemistry Department include a) the Head of the Department, b) the Department general assembly, c) the Head of each Section and d) the Section general assembly.

III. SECTIONS AND LABORATORIES OF THE CHEMISTRY DEPARTMENT

The Chemistry Department is composed of four Sections:

A. Section of Inorganic and Analytical Chemistry
B. Section of Organic Chemistry and Biochemistry
C. Section of Industrial and Food Chemistry
D. Section of Physical Chemistry

The above four sections are responsible for the operation of the following seven Laboratories:

Section A: Laboratory of Inorganic Chemistry
Laboratory of Analytical Chemistry
Section B: Laboratory of Organic Chemistry
Laboratory of Biochemistry
Section C: Laboratory of Industrial Chemistry
Laboratory of Food Chemistry

Section D: Laboratory of Physical Chemistry

In addition to individual Section Laboratories there are the following Laboratories:

Laboratory of Electronics and Mechanics of the Chemistry Department; Technical Staff: Brafas Georgios
Departmental Chromatography Laboratory; Technical Staff: Krikorian Dimitrios
Departmental Spectroscopy Laboratory;

Reseach Units (Network of Reseach Support Laboratories) of the University of Ioannina include:

Mass Spectrometry Unit (LC-MSD-Trap-SL). Coordinator: Varvounis G.

Unit for Environmental, Organic and Biochemical Analysis (Orbitrap LC/MS). Coordinator: Albanis T.

Nuclear Magnetic Resonance Unit. X. Coordinator : Gerothanasis I.

Single-crystal X-ray Diffraction Unit (XRD). Coordinator: Skoulika S.

Automated Organic Synthesis Unit. Coordinator: Mousis V.

IV. FACULTY AND STAFF OF THE CHEMISTRY DEPARTMENT

Faculty and staff for each of the four Sections is as follows:

SECTION OF INORGANIC AND ANALYTICAL CHEMISTRY

FULL PROFESSORS: ALBANIS TRIANTAFILOS, KABANOS THEMISTOKLIS, LOULOUDI MARIA, PLAKATOURAS IOANNIS, HADJIKAKOU SOTIRIS, VLESSIDIS ATHANASIOS, GAROUFIS ACHILEAS, STALIKAS KONSTANTINOS
ASSOCIATE PROFESSORS: PRODROMIDIS MAMAS, TSIPIS ATHANASIOS, MALANDRINOS GERASIMOS
ASSISTANT PROFESSORS: SAKKAS VASILIOS, MANOS EMANOUIL, GIOKAS DIMOSTHENIS
TECHNICAL STAFF: BARTZOUMA CHRISSOULA, BOTI VASSILIKI, TSIATOURAS VASILIOS, TSIAFOULIS KONSTANTINOS, TSOUTSI CHAROULA, FLOROU AGELIKI, FIAMEGOS IOANNIS

SECTION OF ORGANIC CHEMISTRY AND BIOCHEMISTRY

FULL PROFESSORS:
GEROTHANASIS IOANNIS, HADJIARAPOGLOU LAZAROS, LEKKA MARIA-ELENI, SKOBRIDIS KONSTANTINOS, TSELEPIS ALEXANDROS, TSIKARIS VASILIOS, TSOUKATOS DIMOKRITOS, VARVOUNIS GEORGE
ASSOCIATE PROFESSORS: ZARKADIS ANTONIOS, KOUKOU ANNA-IRINI, PANOU EVGENIA, SISKOS MICHAIL
ASSOCIATE PROFESSORS: ZARKADIS ANTONIOS, KOUKOU ANNA-IRINI, PANOU EVGENIA, SISKOS MICHAIL
ASSISTANT PROFESSORS: TZAKOS ANDREAS
TECHNICAL STAFF: GOREZI MARIANA, KRIKORIAN DIMITRIOS, MOUSIS VASILIOS, PANTAZI DESPINA, TELLIS KONSTANTINOS,

SECTION OF INDUSTRIAL AND FOOD CHEMISTRY

FULL PROFESSORS: VAIMAKIS TIVERIUS, DEMERTZIS PANAGIOTIS, KONTOMINAS MICHAIL, ROUSSIS IOANNIS, SAVVAIDIS IOANNIS

ASSOCIATE PROFESSORS: AKRIDA-DEMERTZI KONSTANTOULA, BOKARIS EFTHIMIOS, PETRAKIS DIMITRIOS, RIGANAKOS KIRIAKOS, KONSTANTINOU IOANNIS, CHELA DIMITRA
ASSISTANT PROFESSORS: BADEKA ANASTASIA, PAPAGEORGIOU GEORGIOS
TECHNICAL STAFF: PIPERIDI CHRISTINA, KALLIMANIS ARISTIDIS, DIAMANTI EKATERINI

SECTION OF PHYSICAL CHEMISTRY
FULL PROFESSORS: MICHAILIDIS ADONIS, MILONA-KOSMA AGNI
ASSOCIATE PROFESSORS: SKOULIKA STAVROULA, VLACHOS KONSTANTINOS, MELISSAS VASILIOS
ASSISTANT PROFESSORS: TASIS DIMITRIOS, KALAMPOUNIAS AGGELOS
TECHNICAL STAFF: DOKOROU VASSILIKI, TABAKI AFRODITI, NOULI EUGENIA

V. DEPARTMENT SECRETERIAT

The Secteteriat of the Chemistry Department operates daily for students (Mon. to Fri.) between 9:00 am-13:00 pm. Department Sectetary: Adamantiou Eleni-Miranta. Secretarial staff include: Vletsas Christos, Skargioti Dimitra, Chaski Anastasia.

Address: University Campus postal Code: *45110 - Ioannina*
Email: *gramchem@cc.uoi.gr*
Web site: *www.chem.uoi.gr*
Tel*: 26510 07194, 07473, 07470, 07225*
Fax*: 26510 07006*

VI. UNDERGRADUATE STUDIES IN THE DEPARTMENT OF CHEMISTRY

a. Duration

The duration of undergraduate studies in the Chemistry Departent is 8 semesters and leads to the degree (Ptychion) in Chemistry. The number of course credits to be completed by students is 240. Course credits assigned to each course are equivalent to ECTS European course credits used within the ERASMUS-SOCRATES exchange Program.

b. Exams

At the end of each semester there is an Exam period of 2-3 weeks involving the courses taught in that particular semester. In September, before the beginning of the Fall semester the Examination period involves courses of both the Fall and Spring semester.

VII. INSTITUTIONAL REGULATION

Regulation regarding the Undergraduate Thesis

All undergraduate students are obliged to conduct an Undergraduate Thesis in one of the research disciplines covered within the Chemistry Department. The duration of the Undergraduate Thesis is 1 semesters (- 8th semester) and is equivalent to 15 ECTS. The Undergraduate Thesis may involve either a specific research project or literature review work

and should bear some degree of novelty. It is to be written and presented orally at the end of the 8th semester.
The Undergraduate Thesis can be combined totally or in part with the ERASMUS Program and can be conducted in any laboratory of the host or that of a cooperating Institution.

Requirements for the fulfillment of the Undergraduate Thesis

The Undergraduate Thesis is offered to students beginning semester 8 of their studies. Students must be fluent in a foreign language (preferably English) in order to be able to use the international literature.
Students undertaking the Undergraduate Thesis should have completed at least 120 course credits including those of a course related to their project.
Each faculty member can act as research advisor to a maximum number of students that varies each year depending on the number of the applying students. A list of research subjects will be posted in early October every year by the Department secretariat. Priority regarding the nature of the research project will be given to students with a high GPA.
The secretariat will prepare a list of students fulfilling the requirements to undertake the Undergraduate Thesis within 10 days after the completion of the Exam period every September.
Students fill a form indicating their priority regarding the faculty member (s) whom they want to work with. Based on their GPA, students are assigned to a specific faculty member.

Stages of the Undergraduate Thesis include: searching of the relevant literature, experimental design, execution of experiments, write up of the thesis, correction by the advisor and final thesis presentation.

The faculty member (student advisor) may discontinue a research project in case of lack of interest on the part of the student or lack of technical facilities necessary to complete the project.
Likewise, the student may discontinue his (her) project in case of inadequate supervision on the part of the student advisor. Such matters are dealt with in the Department General assembly.
Each student receives a specific amount of money for the needs of the research project.
Upon completion of the thesis write up, the Thesis is published in its final form and submitted to the Department Secreteriat. The student presents the major parts of the Thesis to an open audience during the week after the Exam period at the end of each academic year. The student advisor grades the Thesis on a special form designed for this purpose.

Certificate of training in Oenology

According to decision 451A/9-3-2001 and 891A/15-7-2014, in order to receive the Certificate of training in Oenology, students must take the following courses during their undergraduate studies:

1. Mathematics
2. Physics
3. Genral and Inorganic Chemistry
4. Organic Chemistry
5. Analytical Chemistry
6. Biochemistry
7. Biology

8. Food Chemistry
9. Food Technology
10. Laboratory of Food Analysis
11. Microbiology-Food Microbiology
12. Elements of Economics
13. Oenology I
14. Oenology II
15. Viticulture
16. Advanced laboratory in Food Analysis -Oenology
17. Food Biochemistry and Biotechnology
18. Undergraduate Thesis related to Oenology

The Certificate of training in Oenology is awarded only to Chemistry graduates. Graduate students of the Chemistry department may also enroll in the above trainng program and take any additional courses in order to fulfill the requirements of the above certificate.

VIII. New undergraduate study program (Beginning with academic year 2016-2017)

1st Semester	2nd Semester	3rd Semester	4th Semester
Analytical Chemistry I (4-5) Inorganic Chemistry I (4-5) Introductory Analytical-Inorganic Chemistry Laboratory (5-5) Mathematics I (4-5) Physics (4-5) Computer Science-Informatics (4-5) English Language I (3)	Analytical Chemistry II (4-5) Inorganic Chemistry II (4-5) Organic Chemistry I (4-5) Physical Chemistry I (4-5) Mathematics II (4-5) English Language II (3) **Elective courses** Biology (3-5) Teaching Science (3-5)	Organic Chemistry II (4-5) Physical Chemistry II (4-5) Laboratory of Analytical Chemistry I (5-5) Laboratory of Inorganic Chemistry I (5-5) Laboratory of Physical Chemistry I (5-5) 1 Optionally Required Course History of Chemistry (3-5) Principles of Economy (3-5) Environmental Chemistry (3-5)	Analytical Chemistry III (4-5) Physical Chemistry III (4-5) Organic Chemistry III (4-5) Laboratory of Analytical Chemistry II (5-5) Laboratory of Inorganic Chemistry II (5-5) Laboratory of Physical Chemistry II (5-5)
(ECTS)= (25-30)	**ECTS= (23-30)**	**ECTS= (26-30)**	**ECTS= (27-30)**

5th Semester	6th Semester
Inorganic Chemistry III (4-5) Biochemistry I (4-5) Principles of Spectroscopy (4-5) Physical Processes in Chemical Technology (4-5) Food Chemistry (4-5) Laboratory of Organic Chemistry I (5-5)	Biochemistry II (4-5) Chemical Processes in Chemical Technology (4-5) Food Technology (4-5) Laboratory of Biochemistry (5-5) Laboratory of Organic Chemistry II (10-10)
ECTS= (25-30)	**ECTS= (27-30)**

7th Semester

Compulsory Courses (16-18)

Laboratory of Analysis and Food Technology (5-5)

Laboratory of Physical and Chemical Processes (5-5)

Undergraduate Thesis Project I - Bibliographic work and Introduction in Research (4-5)

3 Optionally Required Courses (15 E.C.T.S.) of all statutory Laboratories of the Department. *

1. Laboratory of Analytical Chemistry
2. Laboratory of Inorganic Chemistry
3. Laboratory of Organic Chemistry
4. Laboratory of Physical Chemistry
5. Laboratory of Biochemistry
6. Laboratory of Industrial Chemistry
7. Laboratory of Chemistry

Optionally Required Courses

1. Laboratory of Analytical Chemistry

7.1.1 ΄ Pollution Control and Environmental Protection Technology (3-5)

7.1.2 Statistical Processing and Quality Control of Experimental Data in Chemical Analysis (3-5)

2. Laboratory of Inorganic Chemistry

7.2.1 Chemistry of Lanthanides and Actinides with Elements of Nuclear Chemistry (3-5)

7.2.2 Metallobiomolecules (3-5)

3 Laboratory of Organic Chemistry

7.3.1 Mechanisms in Organic Chemistry (3-5)

7.3.2 Heterocyclic Chemistry (3-5)

7.3.3 Peptide Chemistry (3-5)

4 Laboratory **of Physical Chemistry**

7.4.1 Applied Quantum Chemistry (3-5)

7.4.2 Applied Statistical Mechanics (3-5)

7.4.3 Crystal chemistry-Crystal structure (3-5)

7.4.4 Chemistry of nanomaterials and applications (3-5)

5 Laboratory of Biochemistry

7.5.1 Biochemistry III (3-5)

7.5.2 Introduction to Clinical Biochemistry (3-5)

7.5.3 Biological Membranes and Basic Principles of Signal Transduction (3-5)

7.5.4 Advanced Biochemistry Laboratory (5-5)

6 Laboratory of Industrial Chemistry

7.6.1 Advanced Technologies for Contamination - Photocatalysis (3-5)

7.6.2 Synthesis and Recycling Technology of Plastics (3-5)

7.6.3 Inorganic Chemical Technology (3-5)

7.6.4 Environmental Geochemistry-Mineralogy (3-5)

7.6.5 Valorization of Natural Resources and Energy (3-5)

7.6.6 Polymer Chemistry (3-5)

7 Laboratory of Chemistry

7.7.1 Food Industries (3-5)

7.7.2 General Microbiology-Microbiology and Food Hygiene (3-5)

7.7.3 Food Analysis- Quality Control - Food Legislation (3-5)

Optional courses for the certificate of training in Oenology

7.7.4. Enology I (3-5)

7.7.5 Viticulture (3-5)

8th Semester

Compulsory Courses (10 ECTS) and 3 Optionally Required Courses (20 ECTS) of all statutory Laboratories of the Department. ***

1. Laboratory of Analytical Chemistry
2. Laboratory of Inorganic Chemistry
3. Laboratory of Organic Chemistry
4. Laboratory of Physical Chemistry
5. Laboratory of Biochemistry
6. Laboratory of Industrial Chemistry
7. Laboratory of Chemistry

Compulsory Courses

Undergraduate Thesis Project II- Research and Results (15-15)

Optional Courses

Analytical Chemistry and Environmental Sciences Option

8.1.1 Applied Electrochemistry: Development of Chemical Sensors and Biosensors (3-5)

8.1.2 Analytical Techniques for the Characterisation of Solids and Applications (3-5)

2 Inorganic Chemistry Option

8.2.1 Catalysis by Metal Complexes-Mechanisms (3-5)

8.2.2 Bioinorganic Chemistry Applications (3-5)

3 Organic Chemistry Option

8.3.1 Retro Synthetic Analysis of Organic Compounds (3-5)

8.3.2 Modern Spectroscopic Methods for the Identification of Organic Molecules (3-5)

8.3.3 Photochemistry of Organic Compounds and Polymers (3-5)

4 Physical and Theoretical Chemistry Option

8.4.1 Molecular Materials (3-5)

8.4.2 Modern Techniques in Quantum and Statistical Mechanics for the Investigation of Chemical Reactions (3-5)

5 Biochemistry and Clinical Chemistry Option

8.5.1 Biotechnology (3-5)

8.5.2 Clinical Chemistry (3-5)

8.5.4. Biopolymers

8.5.5 Laboratory of Clinical Chemistry (5-5)

6 Chemical Technology Option

8.6.1 Organic Chemical Technology (3-5)

8.6.2 History and Scientology of Chemistry (3-5)

8.6.3 Laboratory of Chemical Technology (5-5)

8.6.4 Polymeric and Composite Materials (3-5)

8 Food Science and Technology Option

8.7.1 Food Packaging (3-5)

8.7.2 Nutrition (3-5)

8.7.3 Food Biochemistry and Biotechnology (3-5)

8.7.4 Advanced Food Laboratory (5-5)

Optional courses for the certificate of training in Oenology

8.7.5 Enology II (3-5)

8.7.6. Laboratory of Enology (3-3)

UNDERGRADUATE STUDY PROGRAM

Beginning with academic year 2012-2013 the following revised Undergraduate Study Program is in effect

	Course Titles	Relevant Section or Department	Teaching Hours	E.C.T.S. – course Credits
✓	**1st Semester Compulsory Courses**			
1.1.	Analytical Chemistry I A. Vlessidis, D. Giokas	A	4	5
1.2.	Inorganic Chemistry I A. Garoufis, G. Malandrinos	A	4	5
1.3.	Introductory Chemistry Laboratory C. Stalikas, A. Tsipis, E. Manos	A, B	5	5
1.4	Mathematics I M. Xenos	T.M.	4	5
1.5.	Physics I. Deligiannakis	Τ.Φ.	4	5
1.6	Computer Science-Informatics	A,B	4	5
1.7	English Language I E. Evmeridou		3	0
			28	30
✓	**2nd Semester Compulsory Courses**			
2.1	Analytical Chemistry II A. Vlessidis, V. Sakkas	A	4	5
2.2.	Inorganic Chemistry II J. Plakatouras, S. Hadjikakou	A	4	5
2.3.	Organic Chemistry I I. Gerothanassis, M. Siskos	B	4	5
2.4	Physical Chemistry I S. Skoulika, C. Vlahos	Δ	4	5
		T.M.	4	5

2.5.	Mathematics II K. Mavridis		3	0
2.6	English Language II E. Evmeridou			
➢	**Elective courses**			
		T.I.	4	5
2.7	Biology E. Friligos			
		Γ	4	5
2.8	History of Chemistry E. Bokaris			
			31	*35*

✓	**3rd Semester Compulsory Courses**			
		A	4	5
3.1.	Analytical Chemistry III C. Stalikas, M. Prodromidis	B	4	5
3.2.	Organic Chemistry II L. Hadjiarapoglou, K. Skobridis	Δ	4	5
3.3.	Physical Chemistry II A. Michaelides, V. Melissas	Δ	5	5
3.4	Laboratory of Inorganic Chemistry I T. Kabanos, J. Plakatouras, M. Louloudi, A. Tsipis	Δ	5	5
3.5.	Laboratory of Physical Chemistry I A. Michaelides, S. Skoulika, C. Vlahos, V. Melissas	A	5	5
3.6.	Laboratory of Analytical Chemistry I T. Albanis, A. Vlessidis, C. Stalikas, M. Prodromidis, V. Sakkas, D. Giokas			
			27	*30*

✓	**4th Semester Compulsory Courses**			
		Γ	4	5
4.1.	Physical Processes in Chemical Technology T. Vaimakis, D. Petrakis	B	4	5
4.2.	Biochemistry I			

	M. E. Lekka, E. Panou,	B	4	5
4.3.	Organic Chemistry III G. Varvounis, A. Zarkadis, A. Tzakos	A	5	5
4.4.	Laboratory of Analytical Chemistry II A. Vlessidis, M. Prodromidis, V. Sakkas, C. Stalikas, D. Giokas,	A	5	5
4.5.	Laboratory of Inorganic Chemistry II A. Garoufis, S. Hadjikakou, G. Malandrinos, E. Manos,	Δ	5	5
4.6.	Laboratory of Physical Chemistry II A. Mylona-Kosma, D. Tasis, A. Kalampounias			
			27	*30*

✓	**5th Semester** **Compulsory Courses**			
		A	4	5
5.1.	Inorganic Chemistry III M. Louloudi, Th. Kabanos	B	4	5
5.2.	Biochemistry II D. Tsoukatos, A. E. Koukkou	Γ	4	5
5.3.	Chemical Processes in Chemical Technology T. Vaimakis, E. Bokaris, D. Petrakis	Γ	4	5
5.4.	Food Chemistry 1st Group: M. Kontominas, A. Badeka 2nd Group: I. Roussis	B	5	5
5.5.	Laboratory of Biochemistry 1st Group: D. Tsoukatos, M.E. Lekka, E. Panou 2nd group: A. Tselepis, A.E. Koukkou	B	5	5
5.6.	Laboratory of Organic Chemistry I All faculty members of the Laboratory of Organic Chemistry M. Gorezi, D. Krikorian, V. Mousis			
			26	*30*

✓	**6th Semester**

	Compulsory Courses			
		Δ	4	5
6.1.	Physical Chemistry III A. Mylona-Kosma, A. Kalampounias			
		Γ	4	5
6.2.	Food Technology P. Demertzis			
		Γ	5	5
6.3.	Laboratory of Physical and Chemical Processes T. Vaimakis, D. Petrakis, E. Bokaris, I. Konstantinou, D. Chela, G. Papageorgiou			
		Γ	5	5
6.4.	Laboratory of Analysis and Food Technology M. Kontominas, P. Demertzis, I. Roussis, K. Akrida, K. Riganakos, I. Savvaidis, A. Badeka			
		Β	10	10
6.5.	Laboratory of Organic Chemistry II All faculty members of the Laboratory of Organic Chemistry M. Gorezi, D. Krikorian, V. Mousis			
			28	*30*

✓	**7th Semester**			
Compulsory Courses (10 E.C.T.S.) and Optional Courses (20 E.C.T.S.) of all statutory Laboratories of the Department				
1.	Laboratory of Analytical Chemistry			
2.	Laboratory of Inorganic Chemistry			
3.	Laboratory of Organic Chemistry			
4	Laboratory of Physical Chemistry			
5.	Laboratory of Biochemistry			
6.	Laboratory of Industrial Chemistry			
7.	Laboratory of Food Chemistry			
➢	**Compulsory Courses**			
			5	5
7.1	Undergraduate Thesis Project			
			4	5
7.2	Spectroscopy, Spectrometry and Applications A. Garoufis, S. Hadjikakou, A. Michailidis, D. Tasis,I Gerothanasis, M.E. Lekka, A. Zarkadis, M. Siskos, K. Skombridis, A. Tzakos			
			9	*10*

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Optional Courses

1	**Laboratory of Analytical Chemistry**		
7.1.1.	Analytical Techniques for the Characterisation of Solids and Applications A. Vlessidis	4	5
7.1.2.	Pollution Control and Environmental Protection Technology T. Albanis, I. Konstantinou, V. Sakkas	4	5
7.1.3.	Statistical Processing and Quality Control of Experimental Data in Chemical Analysis C. Stalikas, V. Sakkas	4	5
		12	*15*
2	**Laboratory of Inorganic Chem istry**		
7.2.1.	Chemistry of Lanthanides and Actinides with Elements of Nuclear Chemistry I. Plakatouras	4	5
7.2.2	Metallobiomolecules A. Garoufis, M. Louloudi, S. Hadjikakou, G. Malandrinos	4	5
		8	10
3	**Laboratory of Organic Chemistry**		
7.3.1	Mechanisms in Organic Chemis try L. Hatziarapoglou	4	5
7.3.2	Heterocyclic Chemistry G. Varvounis	4	5
7.3.3	Peptide Chemistry E. Panou, A. Tzakos	4	5
		12	*15*
4	**Laboratory of Physical Chemis try**		
7.4.1	Applied Quantum Chemistry A. Mylona-Kosma, V. Melissas	4	5
		4	5

7.4.3	Crystal chemis	4
		4
		16
5	**Laboratory of**	
7.5.1	Biochemistry I	4
7.5.2	Introduction to	4
7.5.4	Biological Mem of Signal Trans	4
7.5.5	Advanced Bioc	4
		20
6	**Laboratory of**	
7.6.1	Environmental	4
7.6.2	Synthesis and Plastics	4
7.6.3 T. Vaimakis, D. Petrakis, E. Bokaris, I.	Laboratory of	4
7.6.4	Inorganic Cher T. Vaimakis	4
7.6.5	Polymer Chem G. Papageorgio	4
		20
7	**Laboratory of**	
7.7.1	Food Industrie	4

	P. Demertzis		
7.7.2	Advanced Food-Enology Laboratory M. Kontominas, I. Roussis, I. Savvaidis, K. Riganakos, A. Badeka	4	5
7.7.3	Food Analysis M. Kontominas, A. Badeka	4	5
7.7.4	Microbiology-Food Microbiology I. Savvaidis	4	5
7.7.5	Enology I I. Roussis, M. Kontominas, P. Demertzis, K. Akrida, A. Badeka	4	5
7.7.6	Viticulture E.Karipidis	4	5
		24	*30*

✓	**8th Semester**		
Compulsory Courses (10 E.C.T.S.) and Optionally Required Courses (20 E.C.T.S.) of all statutory Laboratories of the Department			
1.	Laboratory of Analytical Chemistry		
2.	Laboratory of Inorganic Chemistry		
3.	Laboratory of Organic Chemistry		
4.	Laboratory of Physical Chemistry		
5.	Laboratory of Biochemistry		
6.	Laboratory of Industrial Chemistry		
7.	Laboratory of Food Chemistryt		
➢	**Compulsory Courses**		
	Undergraduate Thesis Project	10	10
		10	*10*
➢	**Optional Courses**		
1	**Analytical Chemistry and Environmental Sciences Option**		
8.1.2	Applied Electrochemistry: Development of Chemical Sensors and Biosensors M. Prodromidis	4	5
8.1.2	Environmental Chemical Analysis-Modern Processes for Environmental	4	5

	Rehabilitation T. Albanis, V. Sakkas		
8.1.3	Environmental Chemistry T. Albanis, D. Giokas	4	5
		12	*15*
2	**Inorganic Chemistry Option**		
8.2.1	Catalysis by Metal Complexes-Mechanisms M. Louloudi, A. Tsipis	4	5
8.2.2	Bioinorganic Chemistry Applications A. Garoufis, S. Hadjikakou, A. Tsipis, E. Manos	4	5
		8	*10*
3	**Organic Chemistry Option**		
8.3.1	Retro Synthetic Analysis of Organic Compounds K. Skombridis	4	5
8.3.2	Modern Spectroscopic Methods for the Identification of Organic Molecules I. Gerothanasis	4	5
8.3.3	Photochemistry of Organic Compounds and Polymers A. Zarkadis, M. Siskos	4	5
		12	*15*
4	**Physical and Theoretical Chemistry Option**		
8.4.1	Molecular Materials A. Mihailidis, S. Skoulika, D. Tasis	4	5
8.4.2	Molecular Photochemistry and Applications D. Tasis	4	5
8.4.3	Modern Techniques in Quantum and Statistical Mechanics for the Investigation	4	5

		12
5	**Biochemistry**	
8.5.1	Biotechnology	4
8.5.2	Clinical Chemi	4
8.5.3	Enzymology Instructor to b	4
8.5.4	Biopolymers	4
8.5.5	Laboratory of	4
		20
6	**Chemical Tech**	
8.6.1	Valorization Energy T. Albanis, I. Konstantinou, G.	4
8.6.2	Organic Chem	4
8.6.3	History and Sc	4
8.6.4	Environmenta D. Hela	4
8.6.5	Polymeric and G. Papageorgi	4
		20
7	**Food Science**	
8.7.1	Food Packagir	4
8.7.2	Nutrition	4

	M. Kontominas, A. Tselepis, P. Demertzis		
		4	5
8.7.3	Quality Control-Food Legislation M. Kontominas, K. Riganakos, A. Badeka		
		4	5
8.7.4	Food Biochemistry and Biotech nology I. Roussis		
		4	5
8.7.5	Enology II K. Akrida		
		4	5
8.7.6	Elements of Economics M. Hletsios		
		24	*30*

IX. E.C.T.S.

The term E.C.T.S. is the short for 'European Community Credit Transfer System. This system was developed by the European Commission to encourage interstate procedures for academic approval of university studies abroad. It provides a means of evaluation (by comparison) of student performance and its transfer from one University to the other.

The E.C.T.S. system is based on the principle of mutual trust among University Institutions which cooperate in this initiative.

The E.C.T.S. system informs students on the courses offered by the host University and the course credits that accompany each course. Course credits signify the amount of work load that studens have to fulfill in order to complete a specific course (lectures, seminars,quizzes, term papers, laboratory exercises, etc. in the E.C.T.S. system 60 course credits are equivalent to an academic year's worth of student course responsibilities.

Course credits are awarded only when a course has been successfully completed

The students enrolling in E.C.T.S.

Students that participate in the E.C.T.S. system take courses offered by a participating University and upon completion of course requirements, transfer the corresponding course credits to any participating Institution.

Usually, students will travel to the host university for a limited time period (i.e. one semester) and will normally return to their home University after completion of the courses they have signed up for. Some students may decide to stay in the host University and receive their degree from this latter Institution. Finally, some students may decide to continue their study in a third Institution. In every case student should abide by the rules of the host University.

Students participating in the E.C.T.S system may receive an ERASMUS scholarship provided that:

- they are citizens of a EU country
- they are not obliged to pay any tuition in the host University but they may have to continue paying regular tuition in the country of origin

- the duration of student study enrollment can not be less than three (3) months and more than one (1) year.
- freshman students are not eligible to receice an ERASMUS scholarship.

For more information consult the E.C.T.S pamphlet available at:
The E.C.T.S. Departrnent, ERASMUS Bureau, Rue Montoyer 70, B-l 040 Brussels, Tel: 32-2-2330111, fax: 32-2-2330150.

The Academic Institutions cooperating with the Chemistry Department of the University of Ioannina in the ERASMUS Program vary year to year.

For more details, please contact Prof. Sotiris Hadjikakou in the Chemistry Department or look up the webpage of the office of international affairs:
http://erasmus.uoi.gr(lifelong-ErasmusProgram)

X. GRADUATE STUDY PROGRAMS IN THE DEPARTMENT OF CHEMISTRY

There are four (4) Graduate study programs operating in the Department of Chemistry:

A' Revised Graduate study program of the Department of Chemistry
B' Revised Interdepartmental Graduate study Program of the Departments of Chemistry and Biological Applications and Technologies in cooperation with the Departments of Landscape Architecture, Plant and Animal production and Aquaculture of the Technological Educational Institute of Epirus, entitled: **Agrochemistry- applications in plant and animal production/ Pharmaceutical Plants**
C' Revised Interdepartmental Graduate Study Program of the Departments of Chemistry, Faculty of Science, Medicine and Biological Applications and Technologies of the School of Health Sciences, University of Ioannina entitled: **Medicinal Chemistry**
D' Interdisciplinary Postgraduate Program of the Departments of Chemistry of the University of Ioannina, the National and Kapodistrian University of Athens, the Aristotle University of Thessaloniki, the University of Patras, the University of Crete and the University of Cyprus, entitled: **Biological Inorganic Chemistry**

More specifically:

A' Revised Graduate program of the Chemistry Department

(Government Gazette 2121 / 01.08.2014, 3356 / 12.15.2014)

General provisions

The Department of Chemistry, University of Ioannina operates the revised Graduate Study Program (GSP) in Chemistry beginning with the academic year 2014-2015, in accordance with the provisions of Law 3685/2008, as amended and in force.

Purpose of GSP

The objective of the GSP is to promote the science of Chemistry (teaching and research). The aim of the GSP is the training of Chemistry graduates through teaching and research, who will contribute to the promotion of the science of Chemistry and related technological development. Highly qualified graduates of the GSP will be able to occupy significant positions in strategic sectors of Public Administration, Universities, Research Institutes and Industry, thus contributing to the further technological development of the country while at the same time upgrading studies in different specialization areas of Chemistry.

Graduate Degrees

The GSP awards a postgraduate diploma (M.Sc.) in the following areas of specialization:
1) Advanced Materials Chemistry, Catalysis and Technological Applications.
2) Modern Monitoring Technologies of Analytical and Environmental Chemistry.
3) Synthetic Chemistry, Biochemistry - Bioactive Compounds.
4) Food Chemistry and Food Technology.
5) Physical and Theoretical Chemistry of Nanostructures and Environmental Systems.

6) History, Epistemology and Didactics of Chemistry.

Graduates Categories

Eligible for admission students should be graduates of Chemistry , Chemical Engineering, Material Science and/or Engineering, Biology, Biochemistry, Environmental Science, Physics, Agronomy, Pharmacy, Medicine, Philosophy and Education of Greek Universities or equivalent recognized institutions abroad as well as TEI graduates of related disciplines.

Duration

The duration for the program to award the Postgraduate diploma (M.Sc.) is 4 (four) semesters.

Course curriculum

The courses, research work, practical exercises and all other training and research activities for the award of M.Sc. are defined as follows: M.Sc. studies involve compulsory attendance and successful examination in theoretical and laboratory courses equivalent to a total workload of 72 credits ECTS, with the following specific requirements: a) four (4) to six (6) courses of specialization chosen by the student, b) two (2) laboratory courses of specialization chosen by the student, c) two (2) courses from those offered by the GSP outside the specialization area chosen by the student and d) the Graduate thesis project within the laboratory of specialization. The theoretical and laboratory courses spread over the first three semesters (A, B and C), totaling thirty (30) ECTS credits per semester. The third semester is available for Laboratory Thesis project (12 ECTS) and constitutes the beginning of the Master Thesis (18 ECTS). The fourth semester is available exclusively for the write up of the dissertation and its defense by the student, equivalent to thirty (30) credits ECTS. The total ECTS credits required for the award of the M.Sc. degree amount to one hundred and twenty (120).

The six areas of specialization include:

1) Advanced Materials Chemistry, Catalysis and Technological Applications.
2) Modern Monitoring Technologies of Analytical and Environmental Chemistry.
3) Synthetic Chemistry, Biochemistry - Bioactive Compounds.
4) Food Chemistry and Food Technology.
5) Physical and Theoretical Chemistry of Nanostructures and Environmental Systems.
6) History, Epistemology and Didactics of Chemistry.

Each theoretical course is worth six (6) ECTS credits and each laboratory course twelve (12) ECTS credits.

Courses offered within each area of specialization are as follows:

1) Advanced Materials Chemistry, Catalysis and Technological Applications

First semester

XYK1. Synthesis of Advanced and Nano-materials
XYK2. Surface Phenomena, Heterogeneous Catalysis and Photocatalysis
XYK3. Special Topics in Synthetic Chemistry I
XYK4. Corellation between Structure and Properties
XYK5. Polymer Synthesis
XYK6. Polymeric Materials
XYK11. Laboratory of Material Synthesis

Second semester

XYK7. Functional and Catalytic Molecular Materials
XYK8. Special Topics in Synthetic Chemistry II
XYK9. Spectrometric and Physicochemical Methods for Material Characterization
XYK10. Chemistry of Diagnostics and pharmaceutical Compounds
XYK12. Laboratory of Method Analysis and Compound Characterization
XYK13. Laboratory of Chemical Technology

2) Modern Monitoring Technologies of Analytical and Environmental Chemistry

First semester

ΤΑΠ1. Modern Techniques and Applications of Chemical Analysis I
ΤΑΠ2. Special Topics in Analytical and Environmental Chemistry
ΤΑΠ5. Field Analysis- Non Destructive Methods of Analysis
ΤΑΠ7. Advanced Laboratory of Analytical Chemistry I

Second semester

ΤΑΠ3. Applications of Nano-materials in Analytical Chemistry
ΤΑΠ4. Environmental Protection Technologies- Advanced Oxidation processes
ΤΑΠ6. Modern Techniques and Applications of Chemical Analysis II
ΤΑΠ8. Advanced Laboratory of Analytical Chemistry II

3) Synthetic Chemistry, Biochemistry - Bioactive Compounds

First semester

ΣΧΒ1. Stereochemistry and Mechanisms of Organic Reactions
ΣΧΒ2. Special topics of Synthetic Chemistry I
ΣΧΒ3. Chemistry and Structure of Peptides and Proteins
ΣΧΒ4. Corellation of Structure to Properties
ΣΧΒ5. Topics in Biochemistry
ΣΧΒ6. Biological Membranes: Structure, Organization and Functionality. Biosignaling
ΣΧΒ13. Photo-Organic Chemistry chemistry-Applications
ΣΧΒ15. Laboratory of Synthetic Chemistry
ΣΧΒ16. Laboratory of Biochemistry I

Second semester

ΣΧΒ7. Biotechnology
ΣΧΒ8. The Logic of Chemical Synthesis- Reverse Analysis of Synthesis
ΣΧΒ9. Biochemistry of Xenobiotics
ΣΧΒ10. Special Topics in Synthetic Chemistry II
ΣΧΒ11. Chemistry of Diagnostics and Pharmaceutical Compounds
ΣΧΒ12. Experimental Design and Data Analysis
ΣΧΒ14. Synthesis of Natural Products and Pharmaceutically Active Compounds
ΣΧΒ17. Laboratory of Biochemistry II
ΣΧΒ18. Laboratory of Analysis Methods and Compounds' Characterization

4) Food Chemistry and Food Technology

First semester

XTT1. Advanced Topics in Food Analysis
XTT2. Advanced Topics in Food Chemistry and Biochemistry
XTT3. Advanced topics in Food Processing and Preservation
XTT7. Advanced Laboratory in Food Analysis and Food Technology I

Second semester

XTT4. Secial Topics in Food Packaging
XTT5. Special Topics in Food Quality Management and Food Hygiene
XTT6. Advanced Topics in Food Biotechnology and Food Microbiology
XTT8. Advanced Laboratory in Food Analysis and Food Technology II

5) Physical and Theoretical Chemistry of Nanostructures and Environmental Systems

First semester

ΦΘΧ1. Mathematical Methods in Chemistry
ΦΘΧ2. Statistical Mechanics
ΦΘΧ3. Computational Chemistry
ΦΘΧ4. Corellation Between Structure and Properties
ΦΘΧ5. Laboratory and Computational Techniques of Characterization and Simulation of Materials and Environmental Systems

Second semester

ΦΘΧ6. Molecular Simulation
ΦΘΧ7. Special Topics in Quantum-mechanics
ΦΘΧ8. Physical Chemistry of Polymers
ΦΘΧ9. Spectrometric and physicochemical Methods of Materials Characterization
ΦΘΧ10. Laboratory of Computational Chemistry

6) History, Epistemology and Didactics of Chemistry

First semester

ΙΕΔ1. The History of Chemistry
ΙΕΔ2. Didactics of Natural Sciences
ΙΕΔ7. Laboratory: Information and Communication Technologies in Didactics of Natural Sciences

Second semester

ΙΕΔ4. Special Topics in the Didactics of Chemistry
ΙΕΔ5. Epistemology of Chemistry (Theory of the conditions and forms of chemical practice and its history)
ΙΕΔ8. Laboratory: Education in Chemistry – Practical training
ΙΕΔ3. Educational Psychology (Learning Theory)
ΙΕΔ6. Educational Psychology (Motivation Theory)

First Semester

Offered courses	**ECTS**
Two (2) courses from the area of specialization chosen by the student	2 x 6 = 12
One (1) laboratory course from the area of specialization chosen by the student	12
One (1) course outside the area of specialization chosen by the student	6
Total credits of first semester	30

or

Offered courses	**ECTS**
Three (3) courses from the area of specialization chosen by the student	3 x 6 = 18
One (1) laboratory course from the area of specialization chosen by the student	12
Total credits of first semester	30

Second semester

Offered courses	**ECTS**
Two (2) courses from the area of specialization chosen by the student	2 x 6 = 12
One (1) laboratory course from the area of specialization chosen by the student	12
One (1) course outside the area of specialization chosen by the student	6
Total credits of second semester	30

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Offered courses	**ECTS**
Two (2) courses from the area ofspecialization chosen by the student	3 x 6 = 18
One (1) laboratory course from the area of specialization chosen by the student student student	12
Total credits of second semester	30

Third Semester

Laboratory thesis project	12 ECTS
Beginning of Master Thesis	18 ECTS
Total credits of third semester	30 ECTS

Fourth Semester

Write up of the dissertation and Master thesis defence	30 ECTS

Number of admitted students
The annual number of admitted students is set at fifty (50) individuals maximum.

Faculty and Staff
Faculty members of the Chemistry Department and other Departments of the University of Ioannina and other Greek Universities participate in the GSP. For the implementation of the GSP, additional teaching staff may be involved in accordance with the provisions of Art. 5 of Law. 3685/2008.

Research infrastructure
For the implementation of the GSP, the Chemistry Department laboratories as well as laboratories in other Departments of the University of Ioannina will be used. There are a number of well established research groups in the Chemistry Department with considerable research activity equipped with a wide variety of research facilities/instrumentation. This instrumentation will be used for the successful implementation of the GSP.

Operational duration of the GSP
The GSP will operate until the academic year 2021-2022, subject to the provisions of par. 11 of Article 80 of Law. 4009/2011 (GG 195), as amended and in force.

B' Revised Interdepartmental Graduate Study Program of the Departments of Chemistry and Biological Applications and Technologies in cooperation with the Departments of Landscape Architecture, Plant and Animal production and Aquaculture of the Technological Educational Institute of Epirus, entitled: *Agrochemistry- applications in plant and animal production/ Pharmaceutical Plants*

General provisions
The Department of Chemistry, University of Ioannina, during the academic year 2014-2015 is co-organizing and operating with the Department of Biological Applications and Technologies of the University of Ioannina and the Departments of Landscape Architecture, Plant production and Aquaculture of the TEI of Epirus, the GSP entitled: **"Agrochemistry - Applications in animal and crop production / Pharmaceutical Plants"** in accordance with the provisions of this decision and the provisions of Law. 3685/2008 (GG 148 SD), as amended and in force.

Purpose of GSP
The GSP is designed to provide graduate level education in Agrochemistry and the primary sector with emphasis on Pharmaceutical/Medicinal plants, so that graduates of the program will gain a strong scientific background, experience and expertise in crop and animal production, quality of products and environmental protection.
The main objectives of the GSP are to:
• Provide high quality graduate studies
• Provide knowledge on modern developments in Agrochemistry and organic medicinal plants
• Develop techniques and methodologies on environmentally friendly crops
• Create scientists with the skills required for successful careers in the private, public and academic sector
• Prepare graduates of the GSP for doctoral studies.

With the involvement of the Departments of Chemistry and Biological Applications and Technologies University of Ioannina and the Departments of Landscape Architecture, Plant production and Aquaculture of the TEI of Epirus utilization of the infrastructure of all collaborating Departments and Faculties will be ensured.

The GSP is evaluated by an independent evaluation body and it is internationally recognized.

Graduate Titles
The GSP awards a postgraduate diploma (M.Sc.) in Agrochemistry - Applications in Animal and Crop Production / Medicinal Plants.

Graduates Categories
Eligible for admission students should be graduates of the Departments of Geotechnical Sciences, Chemistry, Biology, Pharmacy, Biochemistry, Chemical Engineering and other related disciplines from Greek Universities and TEI or recognized equivalent institutions abroad.

Duration
The duration for the program to award the Postgraduate diploma (M.Sc.) is 4 (four) semesters.

Curriculum
Each semester includes at least 13 full teaching weeks. The courses of the first semester are mandatory (core courses), while courses of the second semester are elective (optional). Course work, research work, laboratory exercises and all other training and research activities are defined as follows:
The GSP requires compulsory attendance and successful examination in 4 theoretical courses and one laboratory course in the first and second semesters, and all laboratory and research activities in C and D semesters. Total credits of the first 2 semesters are sixty (60) ECTS. Each course is worth five (5) ECTS and each laboratory course ten (10) ECTS. In the third Semester the research work of the Thesis is worth 10 ECTS and the beginning of the dissertation is worth 20 ECTS. The preparation of dissertation is completed in the fourth semester of study and is worth 30 ECTS. Total ECTS required for the award of M.Sc. amount to one hundred and twenty (120). Specifically, courses and laboratories are distributed as follows:

First Semester

α/α	**Courses**	**ECTS**
1	Current trends in the management of agricultural ecosystems	5
2	Introduction to Biochemistry and Molecular Biology (core)	5
3	Farm Chemicals: Applications, Action, Residues and Environmental Impacts (core)	5
4	Cultivation of Medicinal and Aromatic Plants (core)	5
5	Introductory Laboratory on Analytical Technologies and their applications	10
Total first semester credits		**30**

Second Semester
(2 Compulsory Courses and two Elective Courses and 1 Laboratory Course)

α/α	**Courses**	**ECTS**

1	5	
2	5	
3	5	
4	5	
5	5	
6	10	
Total second semester credits		**30**

Third Semester

α/α	**Courses**	**ECTS**
1	Literature review and presentation of the research proposal in the research field of the thesis	10
2	Beginning of dissertation	20
	Total third semester credits	**30**

Fourth Semester

α/α	**Courses**	**ECTS**
1	Completion of the Graduate Thesis – Write up - Presentation of Master's Thesis	30
	Total fourth semester credits	**30**

Number of admitted students

The annual number of admissions to the GSP is set at twenty (20) students maximum.

Faculty and staff

For the implementation of the GSP, numerous faculty members and scientific staff of cooperating Departments will cooperate. Also, additional teaching staff may be involved in the GSP in accordance with the provisions of Art. 5 of Law. 3685/2008.

Research infrastructure

The University of Ioannina and the TEI of Epirus have the necessary building infrastructure, adequate library infrastructure and the necessary equipment both in media and in computers for the smooth running of the program. Infrastructure to be used will include:

• the classrooms of the Departments of Chemistry and Biological Applications and Technologies.

• the student and research laboratories of the Departments of Chemistry and Biological Applications and Technology and the Department of Agronomy Technologists of the School of Agricultural Technology of Nutrition and Food Technology, TEI of Epirus.

• The following centers/research units belonging to the "Network of Horizontal Laboratory Units and Centers" University of Ioannina will be used:

- Computer Center, University of Ioannina
- Center for Nuclear Magnetic Resonance
- Environmental, Organic and Biochemical Analysis - Orbitrap LC-MS unit

- Mass Spectrometry Unit and
- Chromatography Unit

Operation
The GSP will operate until the academic year 2021-2022, subject to the provisions of par. 11 of Article 80 of Law. 4009/2011 (GG 195 SD), as amended and in force.

C' Revised Interdepartmental Graduate Study Program of the Departments of Chemistry, Faculty of Science, Medicine and Biological Applications and Technologies of the School of Health Sciences, University of Ioannina entitled: Medicinal Chemistry

General provisions
The Departments of Chemistry, Faculty of Science, Medicine and Biological Applications and Technologies of the School of Health Sciences, University of Ioannina, will operate during the academic year 2014-2015, the GSP entitled "Medicinal Chemistry", in accordance with the provisions of this decision and the provisions of Law 3685/2008 (ΦΕΚ 148 τ.Α΄), as amended and in force.

Purpose of GSP
The revised Interdepartmental Graduate Study Program (IGSP) is based on close cooperation between basic sciences and clinical sciences, bridges the gap between basic knowledge and clinical practice and aims to develop research and promote knowledge in the scientific fields of Chemistry and Biology that are related to the medical sciences. It also seeks to improve the competitiveness of the Greek scientific workforce in the specified scientific fields.

Specifically, in partnership with the Departments of Chemistry, Medicine and Biological Applications and Technologies of the University of Ioannina, the program seeks to:
1. Utilize the Greek scientific expertise of the three Departments that specialize in the interdisciplinary areas of the IGSP.
2. Utilize the material-technical infrastructure of the cooperating Departments and Faculties as well as the collaborating Research Institutes and Laboratories.
3. Promote effective interaction of scientific disciplines and laboratory techniques, with the aim of offering comprehensive training to young scientists and then employing them in developing areas of the national economy, such as public and private health service providers (e.g. Hospital Laboratories and Clinics, Diagnostic Centers, etc.), Universities, Research Centers, the Pharmaceutical and Chemical Industries, etc.

Postgraduate titles
The GSP awards a postgraduate diploma (M.Sc.) in Medicinal Chemistry.

Graduate categories
The graduates that are admitted to the GSP are required to hold a degree in Chemistry, Biology, Medicine, Pharmacy, Biochemistry, Chemical Engineering, Materials Engineering or related Departments of Greek Universities or recognized equivalent Institutions abroad as well as Technical Education Institutes (T.E.I.) of Greece in related disciplines.

Duration
The duration for the award of the postgraduate diploma is set at three (3) semesters.

Curriculum

The program combines graduate courses and practical experience in both basic and clinical laboratory research. The courses ,research work, practical exercises and all other training and research activities for the award of the postgraduate diploma, are defined as follows:
The award of the postgraduate diploma requires compulsory attendance and successful examination in four (4) theoretical courses and one (1) laboratory course during the first (A΄) semester of study, and in all laboratory and research activities in the second (B΄) semester of study. A total of sixty (60) ECTS credits are required for the first two semesters. Each course is credited with five (5) ECTS while laboratory courses with ten (10) ECTS. The preparation of the dissertation takes place during the third (C΄) Semester and is credited with 30 ECTS. The total ECTS required for the award of the postgraduate diploma amounts to ninety (90). Detailed distribution of courses and laboratory work is as follows:

First semester

s/n	Courses offered	ECTS
I	Biological inorganic chemistry	5
II	Three (3) elective courses from the table below	3X5=15
III	One (1) elective laboratory course from the table below	10
	Total A΄credits	30

s/n	Elective courses (5 ECTS)	ECTS
1	Synthesis of pharmaceutical and diagnostic compounds	5
2	Natural and biotechnological products as bioactive compounds	5
3	Spectroscopic and physicochemical methods: medical applications	5
4	Special topics in biochemistry and molecular biology	5
5	Cell biology	5
6	Biophysical methods and models in the study of structure-biological activity relationships	5
7	Biomarkers-biosensors. Significance in clinical analysis	5
8	Biochemistry-molecular biology-pathophysiology of chronic diseases	5
9	Metabolism of lipoproteins. Primary and secondary dyslipidemia	5
10	Molecular pharmacology of cardiovascular drugs	5
11	Treatment of dyslipidemias	5

Second semester

s/n		ECTS
1	Laboratory of organic and inorganic synthetic chemistry and biotechnology	10
2	Methods and techniques for the determination of biomarkers	10
3	Cellular and molecular pharmacology laboratory	10

	Total B΄credits	30

Third semester

s/n	ECTS
Graduate thesis work. Writing and completion of the graduate thesis	30
Total C΄credits	30

Number of admitted students
The annual number of admissions to the G.S.P. is set at a maximum of twenty (20) persons.

Faculty and staff
For the implementation of the GSP, Faculty Members will be employed from the Departments of Chemistry, Medicine and Biological Applications and Technologies as well as Faculty Members from other Departments of the University of Ioannina and other Greek Universities. Instructors who comply with the provisions of Article 5 of Law 3685/2008 may be also employed for specific course teaching.

Material-technical infrastructure
(a) Lecture rooms: Lecture rooms belonging to the Departments of Chemistry, Medicine and Biological Applications and Technologies will be used for teaching purposes.
(b) Laboratory classes: Use will be made of undergraduate student and research laboratories of the Departments of Chemistry, Medicine and Biological Applications and Technologies.
(c) Instrumentation: The University of Ioannina operates a "Network of Horizontal Laboratory Units and Centers." This currently includes units many of which are housed on the premises of the Departments of Chemistry and Medicine and Biological Applications and Technologies. The following units are directly related to the GSP:

1. Computer Center of the University of Ioannina
2. Nuclear Magnetic Resonance Center
3. Unit of Advanced Electron Microscopy
4. Unit for the Thermal Measurements of Materials
5. Chromatography Unit
6. Unit for the Automation of Organic Synthesis
7. Atherothrombosis Research Center

Duration

The GSP wil operate until the academic year 2021-2022, subject to the provisions of paragraph 11 of article 80 of Law 4009/2011 (ΦΕΚ 195 τ. Α΄), as amended and in force.

D' Interdisciplinary Postgraduate Program of the Departments of Chemistry of the University of Ioannina, the National and Kapodistrian University of Athens, the Aristotle University of Thessaloniki, the University of Patras, the University of Crete and the University of Cyprus, entitled:
" Biological Inorganic Chemistry"
(FEK 3514 / 1-11-2016, B)
bic.chem.uoi.gr
DURATION: 3 semesters
90 E.C.T.S.

General provisions

The Departments of Chemistry of the University of Ioannina, the Chemistry of the National and Kapodistrian University of Athens, the Chemistry of the Aristotle University of Thessaloniki, the Chemistry of the University of Patras, the Chemistry of the University of Crete and the Chemistry of the University of Cyprus will operate during academic year 2017-2018. The IPP entitled "Inorganic Biological Chemistry", in accordance with the provisions of this decision and the provisions of Law 3685/2008 (FEK 148 t.a.), as amended and in force. The administrative support of the program is undertaken by the Department of Chemistry of the University of Ioannina.

Purpose of IPP

Object of the IPPM " Biological Inorganic Chemistry", is the development of postgraduate studies and high level research in the field of Biological Inorganic Chemistry. Biological Inorganic Chemistry based on the study of the role of various metal ions (trace elements) and other minerals in biological systems. Biological Inorganic Chemistry has many applications such as: the role of heavy metals in environmental pollution, the elucidation of the mode of metalloenzymes, the development of biocatalysts and biocatalyzation, the development of diagnostics for cancer and other diseases, etc.

The success of the project's aims is based on

a) the coordinated efforts of teaching and research activities of the faculty members of all the participating departments,

b) the attraction of students from all over Greece, Cyprus and abroad

In particular, with the collaboration of the Departments of Chemistry of the University of Ioannina, the National and Kapodistrian University of Athens, the Aristotle University of Thessaloniki, University of Patras, the University of Crete and the University of Cyprus,

1. The exploitation of Greek and Cypriot scientific potential of the Departments that specializes in the interdisciplinary cognitive domain of the graduate program.
2. The use of the infrastructure of the Departments and Associated Schools.
3. The interaction of cognitive areas and laboratory techniques aiming at the integrated education of young scientists and their use in developmental areas of the National Economy, such as the staffing of public and private health service providers (eg Laboratories and Clinics of Hospitals, Diagnostics Centers, etc.), Universities, Research Centers, Pharmaceuticals and Chemical Industry,
4. The extensive experience had already gained from the 10-year operation of the Bio-inorganic Chemistry that was the precursor of this program. The latter should be considered as the natural continuator of the "Bio-inorganic Chemistry".

Postgraduate title

The IPP awards a postgraduate diploma (M.Sc.) in Biological Inorganic Chemistry.

Graduate categories

The graduates that are admitted to the IPP are required to hold a degree in Chemistry, Biology, Medicine, Pharmacy, Biochemistry, Chemical Engineering, Materials Engineering or related Departments of Greek Universities or recognized equivalent Institutions abroad as well as Technical Education Institutes (T.E.I.) of Greece in related disciplines.

Duration

The duration for the award of the postgraduate diploma is set at three (3) semesters.

Curriculum

The program combines postgraduate courses and practical experience in basic and laboratory research. The courses, the research work, the practical exercise and any other kind of educational and research activities for the award of the Master's degree. are defined as follows: For the award of the Master's degree program compulsory attendance and successful examination is required in 4 theoretical courses and 1 laboratory course of the first semester, as well as all the laboratory and research activities of the 2nd semester of study. The total number of credits in the first two semesters is sixty (60) ECTS. Each course is credited with five (5) ECTS and each 10-week ECTS course. The diploma thesis is carried out in the 3rd semester of study and is credited with 30 ECTS. In detail, courses and workshops are distributed as follows:

First semester

	Courses	**ECTS**
I	Bioinorganic Chemistry	5
II	Physico-chemical, spectroscopic and biochemical methods in Bioinorganic Chemistry	5
III	Pharmaceutical activity of Biophysics	5
IV	Special Topics in Biochemistry-Molecular Biology	5
V	Laboratory of Spectroscopic and Physicochemical Techniques.	5
	Total credits	**30**

Second semester

		ECTS
1	Research	10
2	Collection of Bibliographical Data	5
3	Beginning of postgraduate diploma thesis	15
	Total credits	**30**

Third semester

		ECTS
1	Graduate thesis work	30
	Total credits	**30**

Number of admitted students

The annual number of students admitted to the postgraduate program is at a maximum of fifteen (15) students.

Faculty and staff

For the implementation of the IIP, Faculty Members will be employed from the Departments of Chemistry, Medicine and Biological Applications and Technologies as well as Faculty Members from other Departments of the University of Ioannina and other Greek Universities (the National and Kapodistrian University of Athens, the Aristotle University of Thessaloniki, the University of Patras, the University of Crete and the University of Cyprus). Instructors who comply with the provisions of Article 5 of Law 3685/2008 may be also employed for specific course teaching.

Infrastructure

The implementation of the Program will be used

(a) Teaching rooms of the participating Chemistry Departments.

(b) The research laboratories of the participating Chemistry Departments.

(c) The units of the Horizontal Laboratory Unit and Centers Network of the University of Ioannina, such as

1. Mass Spectroscopy Unit
2. X-ray crystallography unit
3. Computer Center of the University of Ioannina
4. Nuclear Magnetic Resonance Center
5. Unit of Thermal Measurement
6. Chromatography unit

8. Specific issues of the material and technical infrastructure of the Program are identified by the Special Collaborative Protocol

Duration

The IIP will operate until the academic year 2022-2023, subject to the provisions of paragraph 11 of article 80 of Law 4009/2011 (ΦΕΚ 195 τ. Α΄), as amended and in force.

XI. TELEPHONE NUMBERS OF FACULTY AND STAFF OF THE DEPARTMENT OF CHEMISTRY

(Outside the university dial : 26510-0XXXX)

FACULTY

Akrida Konstantoula, Associate Professor	8339
Albanis Triantafilos, Professor	8348
Baimakis Tiverios, Professor	8352
Varvounis George, Professor	8382
Vlachos Konstantinos, Associate Professor	8430
Vlessidis Athanasios, Professor	8401
Garoufis Achileas, Professor	8409
Gerothanasis Ioannis, Professor	8389
Demertzis Panagiotis, Professor	8340
Zarkadis Antonios, Associate Professor	8379
Theodorou-Kasioumi Vassiliki, Professor	8591
Kabanos Themistoklis, Professor	8423
Kontominas Michael, Professor	8342
Konstantinou Ioannis	8349
Koukou Anna –Eirini, Associate Professor	8371
Lekka Maria-Eleni, Professor	8367
Louloudi Maria, Professor	8418
Malandrinos Gerasimos, Assistant professor	8407
Manos Emanouil, Assistant Professor	8416
Melissas Vassilios, Associate Professor	8471
Michailidis Adonis , Professor	8447
Badeka Anastasia, Assistant Professor	8705
Bokaris Efthimios, associate Professor	8377
Milona-Kosjma Agni, Professor	8441
Panou Evgenia, Associate Professor	8393
Papageorgiou Georgios, Assistant Professor	8354
Petrakis Dimitrios, Associate Professor	8347
Plakatouras Ioannis, Professor	8417
Prodromidis Mamas, Associate Professor	8412
Riganakos Kyriakos, Associate Professor	8341
Roussis Ioannis, Professor	8344
Savvaidis Ioannis, Professor	8343
Sakas Vassilios, Assistant Professor	8303
Siskos Michail, Associate Professor	8394
Skobridis Konstantinos, Associate Professor	8598
Skoulika Stavroula, Associate Professor	8446
Stalikas Konstantinos, Professor	8414
Tassis Dimitrios, Assistant Professor	8448
Tselepis Alexandros, Professor	8365
Tsikaris Vassilios, Professor	8383
Tsipis Athanasios, Associate Professor	8333
Tsoukatos Dimokritos, Professor	8368
Tzakos Andreas, Assistant Professor	8387
Hadjiarapoglou Lazaros, Profeesor	8380
Hadjikakou Sotiris, Professor	8374
Chela Dimitra, (Hela Dimitra), Associate Professor	8408

- PROFESSORS EMERITI OF THE DEPARTMENT OF CHEMISTRY

Evmiridis Nikolaos, Professor Emeritus	8702
Karagiannis Miltiadis, Professor Emeritus	8406
Hadjiliadis Nikolaos, Professor Emeritus	8420
Pomonis Philipos, Professor Emeritus	8350
Σakarellos Konstantinos, Professor Emeritus	8390
Σakarellou-Daitsiotou, Professor Emeritus	8386

- **STAFF OF THE CHEMISTRY DEPARTMENT**

Gorezi Marianna	(E.D.I.P.)	E3 ground floor	7386
Diamanti Ekaterini	(I.D.A.Ch.)	X2-120	8357
Kallimanis Aristidis	(I.D.A.Ch.)	X2-119	8356
Karkabounas Athanasios	(E.D.I.P..)	X2-223	8428
Krikorian Demitrios	(E.D.I.P..)	E3 ground floor	8376
Moussis Vassilios	(E.D.I.P.)	E3 ground floor	7386
Boti Vassiliki	(E.D.I.P.)	X2-083	8317
Brafas Georgios	(E.T.E.P..)	X2-106	8395
Dokorou Vassiliki	(E.D.I.P.)	X3-117α	8445
Pantazi Despina	(E.D.I.P.)	X3-124	8378
Piperidi Christina	(E.D.I.P.)	X2-119	8356
Tabaki Afroditi	(E.D.I.P.)	X3-321	8436
Tellis konstantinos	(E.D.I.P.)	X3-124	8326
Tsiatouras Vassilios	(E.D.I.P.)	X3-224	8728
Tsiafoulis Konstantinos	(E.D.I.P.)	X3-114	8315
Tsoutsi Charoula	(E.D.I.P)	X2-224	8363
Fiamegos Ioannis	(E.T.E.P.)	X2-080	8336
Florou Ageliki	(E.D.I.P.)	X2-080	8403

XII. LIBRARY AND INFORMATION CENTER OF THE UNIVERSITY OF IOANNINA

The library and Information Center of the University of Ioannina is housed in an autonomous 6-story building located at the center of the University Campus. It is the largest university library building in Greece covering a total area of 17,400 m2 of which 14,500 m2 are allocated for library services and the rest for University service needs. Of the existing six stories, four are used for the placement of book shelves and reading areas while the othe two are used for personnel specific needs. On the ground floor one can find general library information material (dictionaries, Encyclopedias, etc.), book series,Journal series and reading rooms. On floors 1-3 one can find books categorized according to the DEWEY system. On the fourth floor one can find previous years' journal volumes. Reading areas can be found in all floors. The library material consists of approximately 10,000 book volumes and 217 journal titles.

The University library provides a wide variety of services including: borrowing of books, reading areas, literature searches and documentation as well as provision of scientific articles. As a member of the National network of the Scientific and Technological Libraries and in cooperation with the National Center for Documentation enables all members of the University community to order journal articles either from other Greek or foreign libraries in an effort to cover the educational and research needs of the Academic community.

The library of the Chemistry Department was incorporated into the Central Library beginning November 2002. The Chemistry collection of the library consists of scientific journals and book volumes.

The University Library offers more than 500 seats in various reading areas and approximately 40 computers for readers' needs. Photocopiers are located in most levels of the library which operate with photocopying cards. Such cards may be purchased from the information desk located in the ground floor of the library. Scanners are also available for document scanning to be sent through e-mail anywhere in the world. The library enables the borrowing of a book that is not part of the library collection but can be found in another domestic or foreign library.
The library organizes training seminars periocally in order to familiarize users with all types of services provided.

The library provides facilities for individuals with special needs (ramps ,elevators, special book collections for individuals with eye-sight problems. A number of private reading rooms are available for those that work for long periods of time in the library.

Regulations for the operation of the library are available in the following web site: **http:/www.lib.uoi.gr/files/regulation.pdf**

The University library has subscribed to more than 10,000 electronic journals which are available to prospective users. The library also provides access to a large number of on-line data bases.
Phone contact: 265100–7958, –7961, –7938,
E-mail : chemdesk@cc.uoi.gr

The University library is open Monday through Friday 08:00 to 20:00 and Saturday 08:00 to 15:00

XIII. ELECTRONIC SERVICES

In the website of the Chemistry Department (http://www.uoi.gr/schools/chemistry/) one can find general information on the foundation and administration of the Department, the Undergraduate and Graduate study programs, laboratories, faculty and staff as well as research accomplishments in various ares of specialization.

Through the STUDENTS WEB application students may have access to various services of the Departmental Secretariat. i.e. students can register for a course, check for their course grades, submit their applications to the Secretariat, etc.

XIV. TIME SCHEDULE OF THE CHEMISTRY DEPARTMENT

	Milestones	Fall Semester	Spring Semester
	Beginning of Aademic year	1 September	
	First dsy of classes	1 October	1 March
	!st year orientation ceremony	10 October	
	Undergraduate program examination period	1-20 September	1-15/2 1-15 /6
	Graduate program examination period	1-15/9 September, 1-15/2 February	5-25/6
	Posting of exam schedules	1 October	1 March
	Completion of questionnaires for course evaluation by students	By the end of semester classes	By the end of semester classes
	Account report for the fulfillment of semester course work	15 February	20 June
	Invitation for the submission of applications for enrolment in Graduate Study programs	A' invitation: up to: 25/7, Classes begin : 1/11	B' invitation up to 30/11 , Classes begin: 1/3
	Invitation for the submission of applications for TA work (without pay)/results	Applications until: 20/9 Selection: 25/9	Applications until 20 /2 Selection: 25/2
	Invitation for the submission of applications for TA work (with pay)/results	After allocation of funds from the Rector's office.invitation period: 20/12 to 25/2. Selection 28/2	

	Beginning and end of course registration*	15-30 September	10-28 February
	Chemistry 'week'		25-28 February
	Course grade submission	Within 20 days from course exam	Within 20 days from course exam
	Graduation oath ceremony	November, April	July
	Course assignment to faculty		April
	Holidays	28th October, 17th November, Christmas holidays, 30/1 Three Hierarchs , 21th February , Lent holidays: From Thursday of Tyrofagos to the day after Clean Monday.	25η March, Easter holidays: From Good Monday to Thomas Sunday, 1st May, and Holy Spirit day.

***Course registration by students is to be completed during the first week of classes. Limited changes in course registration can be made during the second week off classes.**