

UNIVERSITY OF CRETE

**Department of Chemistry**

School of Sciences & Engineering

## Study Guide





## Organization of the Department

### Establishment of the Department

The Department of Chemistry at the University of Crete, Faculty of Science and Engineering, was established in 1985 with a competitive research graduate program. Two years later, in autumn 1987, by resolution of the Ministry of Education, the undergraduate curriculum was established.

## Administration of the Department

**Chair:** Maria Kanakidou

Position: Professor

Telephone: +30 2810-545033, E-mail: [mariak@chemistry.uoc.gr](mailto:mariak@chemistry.uoc.gr)

**Vice Chair:** Ioulia Smonou

Position: Deputy Professor

Telephone: +30 2810-545010, E-mail: [smonou@chemistry.uoc.gr](mailto:smonou@chemistry.uoc.gr)



### Head Secretary:



Anna Pantelidaki,

Office: A.306

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### Secretary :



Evaggelia Batzakaki,

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Vasilios Tsolis

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Paraskevi Voulgaraki

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Email: [Vivianv@chemistry.uoc.gr](mailto:Vivianv@chemistry.uoc.gr)

## General Description of the Department

The Department is organized in five (5) academic divisions.

Faculty and technical staff are as follows:

### Physical Chemistry

	Phone+30-2810-	e-mail	Field of Research
Spiros Anastasiadis, Professor	545073	<a href="mailto:spiros@chemistry.uoc.gr">spiros@chemistry.uoc.gr</a>	Polymers, nanomaterials
Demetrios Anglos, Associate Professor	545072	<a href="mailto:anglos@chemistry.uoc.gr">anglos@chemistry.uoc.gr</a>	Atomic and molecular spectroscopy, photophysics
Stavros K. Farantos, Professor	545061	<a href="mailto:farantos@iesl.forth.gr">farantos@iesl.forth.gr</a>	Theoretical and Computational Chemistry
Georgios Froudakis, Professor	545055	<a href="mailto:frudakis@chemistry.uoc.gr">frudakis@chemistry.uoc.gr</a>	Theoretical and Computational Chemistry
Theofanis Kitsopoulos, Professor	545202	<a href="mailto:theo@chemistry.uoc.gr">theo@chemistry.uoc.gr</a>	Chemical dynamics
Panos Papagiannakopoulos, Professor	545031	<a href="mailto:panosp@chemistry.uoc.gr">panosp@chemistry.uoc.gr</a>	Photochemistry and chemical kinetics
Apostolos K. Rizos, Professor	545048	<a href="mailto:rizos@chemistry.uoc.gr">rizos@chemistry.uoc.gr</a>	Structure and dynamics of polymers and biomacromolecules



## Organic Chemistry

Haralambos Katerinopoulos Professor	545026	kater@chemistry.uoc.gr	Isolation and synthesis of bioactive compounds
Michael Orfanopoulos Professor	545030	orfanop@chemistry.uoc.gr	Fullerene chemistry and photochemistry-Organic reactions mechanisms
Ioulia Smonou Associate Professor	545010	smonou@chemistry.uoc.gr	Biocatalysis-Enzymes in organic synthesis
Manolis Stratakis Professor	545087	stratakis@chemistry.uoc.gr	Organic synthesis, heterogeneous catalysis
Georgios Vassilikogiannakis Associate Professor	545074	vasil@chemistry.uoc.gr	Natural product synthesis, synthetic methodology, green chemistry

## Inorganic Chemistry

Athanasios Coutsolelos, Professor	545045	coutsole@chemistry.uoc.gr	Bioinorganic chemistry
Konstantinos Demadis, Associate Professor	545051	demadis@chemistry.uoc.gr	Crystal engineering, growth and design
Konstantinos Milios, Assistant Professor	545099	komil@chemistry.uoc.gr	Synthetic bioinorganic chemistry, coordination chemistry
Pantelis Trikalitis, Associate Professor	545052	ptrikal@chemistry.uoc.gr	Chemistry of materials

## Environmental and Analytical Chemistry

Maria Kanakidou, Professor	545033	mariak@chemistry.uoc.gr	Atmospheric chemistry and modeling, climate change
Nikolaos Mihalopoulos, Professor	545062	mihalo@chemistry.uoc.gr	Atmospheric chemistry and physics
Spyros Pergantis, Associate Professor	545084	spergantis@chemistry.uoc.gr	Analytical mass spectrometry

Apostolos Spyros, Assistant Professor	545085	aspyros@chemistry.uoc.gr	Analytical NMR spectroscopy
Euripides G. Stephanou, Professor	545028	stephanou@chemistry.uoc.gr	Environmental organic chemistry
Nikolaos Chaniotakis, Professor	545018	nchan@chemistry.uoc.gr	Analytical chemistry, sensors

## Biochemistry

Demetrios Ghanotakis, Professor	545034	ghanotakis@chemistry.uoc.gr	Protein biochemistry and biotechnology, photosynthesis
Georgios Tsiotis, Associate Professor	545006	tsiotis@chemistry.uoc.gr	Proteomics, biochemistry

## Emeritus Professors

Photis Dais	545037	dais@chemistry.uoc.gr	NMR spectroscopy
Gerasimos J. Karabatsos	545131	karabats@edu.uoc.gr	Physical organic chemistry



**LABORATORY INSTRUCTORS**

Eleftheria Vardalachaki	Inorganic Chemistry Lab	545022	vardal@chemistry.uoc.gr
Agathopoulos Katachanakis	Organic Chemistry Lab	545063	agathopoulos@chemistry.uoc.gr
Spyridon Kornilios	General Chemistry Lab	545050	skorn@chemistry.uoc.gr
Kalliopi Kavelaki	Biochemistry Lab	545029	kavelaki@chemistry.uoc.gr
John Saridakis	Analytical Chemistry Lab	545015	saridak@chemistry.uoc.gr
Nikolaos Strarigakis	Physical Chemistry Lab	545017	stratig@chemistry.uoc.gr
Haralambos Triantafillakis	Computer Lab	545151	triant@chemistry.uoc.gr

**ENGLISH LANGUAGE INSTRUCTOR**

Kalliopi Katsaboxaki-Hodgetts		545102	kalliahodgetts@gmail.com
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**COMPUTER AND NET SUPPORT**

Michael Theodorakis	Net Support	545181	mtheo@chemistry.uoc.gr
Stavros Tzetzailidis	Net Support	545149	webpages@chemistry.uoc.gr
Haralambos Triantafillakis	Computer Lab	545151	triant@chemistry.uoc.gr

**ELECTRONICS LAB SUPPORT**

George Papadakis	Electronics Lab	545059	gpapadak@chemistry.uoc.gr
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**GLASSBLOWING LAB SUPPORT**

Spyros Skouradakis

Haralambos Tsikalas

**CHEMISTRY LAB SUPPORT**

Maria Apostolaki (Ph.D.)	Chemist	545079	mapostolak@chemistry.uoc.gr
Paraskevi Mara (Ph.D.)	Biologist	545112	vmara@chemistry.uoc.gr
Georgios Kouvarakis (Ph.D.)	Chemist	545162	kouvarak@chemistry.uoc.gr
Antonios Kouvarakis (Ph.D.)	Chemist	545079	akn@chemistry.uoc.gr
Vassilios Papadimitriou (Ph.D)	Chemist	545044	bpapadim@chemistry.uoc.gr
Maria Fouskaki (M.Sc.)	Chemist	545016	fouskaki@chemistry.uoc.gr

**Participation in the ERASMUS program**

The Department of Chemistry is involved in the ERASMUS Program activities of the University of Crete. Faculty, students and administrative personnel participate in exchanges with the following academic partner Universities:

**BILATERAL AGREEMENTS / Department of Chemistry**

University	Activity	Sub. Area	Acad. Year
Universiteit Gent <b>B GENT01</b>	SM STA	4421 4421	2008/2013
Univerzita Karlova v Praze <b>CZ PRAHA07</b>	SM	442	2007/2013
Masarykova Univerzita, Department of Chemistry <b>CZ BRNO05</b>	SM STA	442 442	2008/2013
Masarykova Univerzita, Centre for Toxic Compounds in the Environment <b>CZ BRNO05</b>	SM STA	442, 4433 442, 4433	2010/2013
Johann Wolfgang Goethe -Universitaet Frankfurt am Main <b>D FRANKFU01</b>	SM STA	442 442	2007/2013
Universitaet Leipzig <b>D LEIPZIG01</b>	SM STA STT	442 442 ICT Servic.	2010/2013
Hochschule Niederrhein <b>D KREFELD01</b>	SMS STA	524 524	2011/2013
Universitat de Barcelona <b>E BARCEL001</b>	SMS STA	524, 442 524, 442	2011/2014
Universitat Autònoma de Barcelona <b>E BARCEL002</b>	SM STA	442 442	2008/2013
Metropolia Ammattikorkeakoulu (Helsinki Metropolia University of Applied Sciences), <b>SF HELSINK41</b> (former SF ESP0002)	SM STA	442 442	2011/2013

Universite Paris Descartes (Paris V) <b>F PARIS005</b>	SM STA	727 727	2009/2013
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Universite Lille 1 – Sciences et Technologies <b>F LILLE01</b>	SM	442	2010/2013
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University	Activity	Sub. Area	Acad. Year
Universite d'Aix-Marseille <b>F MARSEIL03</b>	SM	442	2007/2013
Universite de Bourgogne – Dijon <b>F DIJON01</b>	SM STA	6202 6202	2011/2013
Lycee Pierre-Gilles de Gennes –ENCPB <b>F PARIS036</b>	SM STA	442 442	2007/2013
Universite de Rennes I <b>F RENNES01</b>	SM STA	442 442	2007/2013
Universite Paris Sud XI <b>F PARIS011</b>	SM STA	442 442	2007/2013
Ecole Normale Superieure, Paris <b>F PARIS087</b>	SM	442	2010/2013
Universite Pierre et Marie Curie <b>F PARIS006</b>	SM	442 442	2009/2013
Universite de Strasbourg <b>F STRASBO48</b>	SMS STA	44 4421	2012/2013
Cardiff University <b>UK CARDIFF01</b>	SM	442	2007/2013
Universita degli Studi di Firenze <b>I FIRENZE01</b>	SM STA	442 442	2007/2013
Universita degli Studi di Bari <b>I BARIO1</b>	SM	442	2007/2013
Universita di Roma "La Sapienza" <b>I ROMA01</b>	SM STA	727, 442 727	2010/2013
Universiteit Utrecht <b>NL UTRECHT01</b>	SM	442	2007/2013

Technische Universiteit Delft <b>NL DELFT01</b>	STA	442	2012/2014
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NTNU, Trondheim <b>N TRONDHE01</b>	SM	442	2007/2013
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University	Activity	Sub. Area	Acad. Year
Uniwersytet Marii Curie – Sklodowskiej <b>PL LUBLIN01</b>	SMS STA STT	442 442 Administr.	2010/2013
Uniwersytet Wroclawski <b>PL WROCLAW01</b>	SM STA	442 442	2011/2013
Universitatea de Vest din Timisoara <b>RO TIMISOA01</b>	SM STA	442 442	2007/2013
Inonu Universitesi <b>TR MALATYA01</b>	SM STA	442 442	2007/2013
Bogazici Universitesi <b>TR ISTANBU01</b>	SM STA	442 442 4433	2007/2013
Orta Dogu Teknik Universitesi <b>TR ANKARA04</b>	SM STA	442 442	2008/2013

#### Code

**SM** = Student mobility  
**STA** = Staff mobility for teaching assignments  
**STT** = Staff mobility for training  
**UG** = Undergraduate  
**PG** = Postgraduate  
**D** = Doctorate

#### Subject areas:

**44** Physical Science  
**442** Chemistry  
**4421** Biochemistry  
**4433** Environmental Sciences, Ecology  
**524** Chemical and Process  
**6202** Food Science and Technology  
**727** Pharmacy



## Admission Procedures

Students are admitted to the Department of Chemistry on the basis of their overall performance in the standard nation-wide exam procedures organized annually and implemented centrally by the Hellenic Ministry of Education. Special arrangements are foreseen for students fulfilling certain social criteria.

## Specific arrangements for recognition of prior learning-Course credit transfer

Credit transfer for courses a student has attended successfully at other Institutions is possible. Students should apply to the Undergraduate Program Committee of the Department, submitting a list of the courses taken together with a description of each course syllabus. Credits are awarded provided that course equivalence is certified by the Department faculty members in charge of teaching the relevant course, and following final approval by the Department Faculty General Assembly.

## General description of learning objectives

### Education and research objectives

Always aiming for scientific excellence in all areas of Chemistry and continuously adapting to scientific breakthroughs, technological advances and educational reforms, the Department has been running a high-level Undergraduate and Graduate Program since 1987. Great emphasis is placed on

undergraduate education in particular to laboratory courses, recognizing that laboratory training is essential to learning and that practical skills are a prerequisite for a successful career. Students are strongly encouraged to participate in research activities early in their studies. To that purpose, the new Department building is fully equipped with state of the art laboratory facilities not only for researchers but also for undergraduate and postgraduate students. Research carried out in the Department of Chemistry by its faculty and their groups is internationally recognized and contributes greatly to high-level training of young researchers working on their MSc - PhD or as post-doctoral fellows. Following a recent (2011) national assessment, the evaluation committee commented on the Department status as follows : «The Chemistry department of the University of Crete has established a high quality research and teaching program that is commensurate with international standards»



## Occupational profile of graduates

Based on their high-level education, graduates of

the Department of Chemistry have diverse opportunities and prospects for employment in either the public or the private sector (academic institutes, government laboratories, industry, and secondary education). Complementary to the educational activity of the Department of Chemistry there is close cooperation with the research and development in the national and international industrial sector through internship programs and the ERASMUS PLACEMENT. The Chemistry Department is also seeking partnerships with industry in joint research projects, with immediate and long-term positive consequences for science and society. This application of such knowledge on the labor market can contribute to job creation and the development of innovation and entrepreneurship in our graduates.

## Access to further studies

Department graduates may be admitted in 2nd Cycle (MSc.) or 3rd Cycle (Ph.D.) studies. Typically, our graduates fulfill the admission requirements and successfully attend Graduate Study Programs in Greek or international Academic Institutions.



Regulations and Undergraduate Curriculum  
Summary of the curriculum. Central axes / directions of the curriculum

**TABLE I**

Indicative ECTS credits distribution throughout the Curriculum

Core courses (compulsory)

Courses	No of Courses	(ECTS) ανά μάθημα	Total ECTS Credits
Lectures	20	6	120
Lab courses	10	6	60
English	2	Non-credit	Non-credit

Elective courses (compulsory)

Courses	No of Courses	(ECTS) ανά μάθημα	Total ECTS Credits
Chemistry Subjects	6 (minimum)	6	36

Elective courses

Courses	No of Courses	(ECTS) ανά μάθημα	Total ECTS Credits
Non-Chemistry Subjects	4 (maximum)	6	24
<b>Total</b>	<b>40</b>	<b>6</b>	<b>240</b>

Alternatives to the compulsory elective courses

Courses	No of Courses	(ECTS) ανά μάθημα	Total ECTS Credits
Industry Internship	1	6	6
Undergraduate Thesis	1	12	12

ECTS Chemistry Departmental Coordinator: Haralambos E. Katerinopoulos

Duration of teaching and examination periods

Starting in September, the Academic Year comprises the Fall Semester (September-December, 13 weeks) the Fall Semester Exams (January, 3 weeks) the Winter Break (1 week) the Spring Semester (February-May, 13 weeks), the Spring Semester Exams (June, 3 weeks), the Summer Break and the September (Additional) Exam Period.

Courses offered to ERASMUS students

Two types of ERASMUS mobility are available to UoC students: A) Study at selected higher education institutions that maintain a bilateral agreement for student mobility with the UoC (ERASMUS Studies), and B) Internship in industry or organizations / institutions in Europe (ERASMUS Placement). The duration of study / internship is typically 3 to 12 months, with full ECTS recognition of the mobility period. In the case of ERASMUS Studies, students have to be enrolled in courses that correspond to the curriculum of our Department, and for 30 ECTS credits per semester. The same policy holds for incoming ERASMUS students.



## Examination regulations, assessment and grading

### Graduation requirements

	UOC Credits	ECTS
Successful Attendance of 30 compulsory (Lectures and Laboratory) courses	120	180
Successful Attendance of 10 elective courses	40	60
<b>Total</b>	<b>160</b>	<b>240</b>

For each course students receive a grade reflecting their overall performance based, in general, on attendance, graded problem sets, mid-term exams and a final exam.

The grading scale is as follows:

EXCELLENT: 8.50 - 10, VERY GOOD: 6.50 - 8.49, GOOD: 5 - 6.49.

Minimum passing grade is 5. Any grade less than 5 is a non-passing grade.

## General description of the curriculum List of Courses

### 1st Year

#### Semester A

Chem-043 Principles of Chemistry  
Chem-044 Quantitative and Qualitative Analysis  
Chem-011 Mathematics I  
Chem-013 Physics I  
Chem-045 Introduction to Computing  
Chem-052 English for Chemistry Foundation I

#### Semester B

Chem-046 Introduction to Biology  
Chem-201 Organic Chemistry I  
Chem-012 Mathematics II  
Chem-017 Physics II  
Chem-047 General Chemistry Lab (starts November)  
Chem-053 English for Chemistry Foundation II

### 2nd Year

#### Semester C

Chem-301 Analytical Chemistry I  
Chem-048 Physical Chemistry I  
Chem-202 Organic Chemistry II  
Chem-311 Physical Chemistry Lab I  
Chem-211 Organic Chemistry Lab I

#### Semester D

Chem-408 Analytical Chemistry II  
Chem-049 Physical Chemistry II  
Chem-401 Inorganic Chemistry I  
Chem-413 Analytical Chemistry Lab I  
Chem-212 Organic Chemistry Lab II

### 3rd Year

#### Semester E

Chem-301 Analytical Chemistry I  
Chem-048 Physical Chemistry I  
Chem-202 Organic Chemistry II  
Chem-311 Physical Chemistry Lab I  
Chem-211 Organic Chemistry Lab I

#### Semester F

Chem-408 Analytical Chemistry II  
Chem-049 Physical Chemistry II  
Chem-401 Inorganic Chemistry I  
Chem-413 Analytical Chemistry Lab I  
Chem-212 Organic Chemistry Lab II

### 4th Year

#### Semester G

Elective -1  
Elective-2  
Elective-3  
Elective-4  
Elective-5

#### Semester H

Elective-6  
Elective-7  
Elective-8  
Elective-9  
Elective-10





## Funding opportunities

National Scholarship Foundation undergraduate scholarships based on the yearly record of excellence of students. Scholarships through the "CHRYSANTHOS AND ANASTASIA KARYDI» Endowment.

## Contact details of administrative and/or academic staff :

Please see "Administration" section

## Departmental Webpage:

[http://www.chemistry.uoc.gr/uocchem/Student's web:](http://www.chemistry.uoc.gr/uocchem/Student's%20web)

[https://student.cc.uoc.gr//](https://student.cc.uoc.gr/)

Graduate Programs Webpage: [http://www.chemistry.uoc.gr/uocchem/index.php?option=com\\_content&task=view&id=70&Itemid=317](http://www.chemistry.uoc.gr/uocchem/index.php?option=com_content&task=view&id=70&Itemid=317)

## Undergraduate Program Webpage:

[http://www.chemistry.uoc.gr/uocchem/index.php?option=com\\_content&task=view&id=62&Itemid=316](http://www.chemistry.uoc.gr/uocchem/index.php?option=com_content&task=view&id=62&Itemid=316)

