





# Bachelor's degree in Chemistry

University Rovira i Virgili (URV)

Faculty of Chemistry  
Tarragona. Spain



UNIVERSITAT  
ROVIRA i VIRGILI





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# Rector's Foreword

On behalf of the Rovira i Virgili University (URV), I would like to give you a warm welcome to our institution. The URV is a modern public university located in Catalonia, one of the most advanced regions of Europe, and is widely recognised for providing teaching and research at the service of Southern Catalonia. Our institution has a strong international character: for example, in 2018, 34 % of our postgraduate students came from abroad, including countries like Ecuador, Colombia, Italy, and China. As a result, the URV is also enjoying a growing reputation for excellence around the world.

The evolution of modern societies has changed the way in which we interact, and it has removed frontiers. For this reason, at URV we teach our students to be competitive in any international job market, by emphasizing the importance of values and a commitment to finding solutions to the challenges facing society. We aim to help our student become excellent professionals and citizens. To achieve this, we provide a full range of educational possibilities through 49 bachelor's degrees, 52 master's degrees (including 2 Erasmus Mundus Joint Master's Degrees), 25 different doctoral programmes and over 30 lifelong learning courses. Altogether, our courses are now being enjoyed by over 14,000 students.

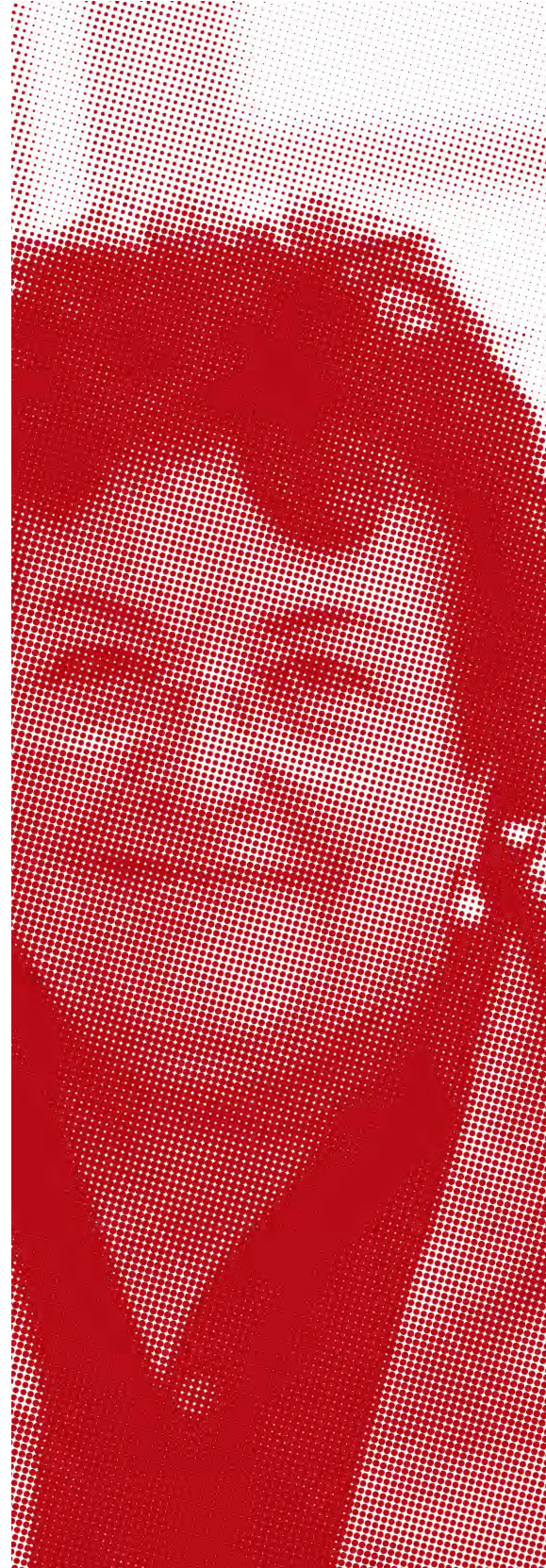
Our campus is just 45 minutes south of Barcelona, economically and culturally one of the most influential cities on the Mediterranean Sea. We have excellent air and high speed railway connections, and all kinds of services are available here. Due to the high quality of life, the high academic level of its universities and the high concentration of businesses, the area of Catalonia is also known as the European Silicon Valley. In this context, URV contributes firmly to the development of the economy of the country, and it has become the link between society, economy, companies and other institutions in Southern Catalonia.

At the URV you will find a group of academics, administrative and services personnel committed to taking care of all aspects of university activity: pre- and postgraduate studies, doctoral programmes and lifelong learning, research, knowledge and technology transfer, university services, management and governance. In recent years, the URV has been one of the fastest growing universities in Europe, and we are strongly committed to the European Areas of Higher Education and Research. Recent rankings indicate that the URV is not only one of the leading universities in Catalonia, but also one of the leading universities in the European area for the quality of its teaching, its commitment to continuous training and the excellence of its research, development and innovation. URV has ranked in the top 401-500 universities in the world according to "Times Higher Education World University Rankings 2019" and is currently ranked number 78 in the world for universities which are less than 50 years' old, according to "Times Higher Education Young University Rankings 2018".

For all these reasons, I am sure you will enjoy your studies at the URV and that together we will be good travelling companions on the path to your chosen career and further personal and intellectual development.

With best wishes

**Maria José Figueras Salvat**  
Rector of URV University









# Faculty of Chemistry Introduction

Chemistry is fundamental to technological innovation and human progress. Understanding the composition and properties of matter and the mechanisms involved in its transformation through chemical reactions requires a capacity of analysis and deduction as well as creativity.

The Faculty of Chemistry at URV is a powerful centre, which aims to use the most advanced resources to educate the best scientists and technicians in the field of Chemistry and Biochemistry. This centre has excellent and modern installations in Sescelades Campus: classrooms, laboratories and a wide range of equipment for teaching and research. The Bachelor's degree in Chemistry at URV is the only one in Catalonia that, in addition to being accredited with the quality seal of EXCELLENT, certifies an interaction between research and excellent teaching recognized by the Agency for the Quality assurance of the Catalan University System. DOW Chemical has chosen URV as one of the 8 strategic universities in Europe, Africa, and Middle East, among 8000 universities, in the field of Chemistry. Additionally, URV is the best centre to study the Bachelor's degree in Chemistry field at URV has ranked top 201-300 universities in the world according to "Shanghai Global Ranking of Academic Subjects 2018", among the top 300 universities according to the "Times Higher Education Ranking 2019" and top 251-300 universities in the world according to "QS World University Rankings 2019".

The most important petrochemical pole in Southern Europe is located in Tarragona, home of the URV, together with an important cluster of food, cosmetic and water treatment companies. The importance of this industrial environment and the presence of the Faculty of Chemistry has led to a cluster of excellence in chemical research being located in Tarragona: the Institute of Chemical Research of Catalonia, the Technological Centre of Chemistry of Catalonia, and the Institute of Energy Research of Catalonia, all three of which are strategic research centres from the economic and environmental point of view. This industrial and research environment means that the Faculty of Chemistry can provide its students with more opportunities than other universities. They can gain work experience in industry through practices in international companies such as DOW, BASF, Repsol, Clariant etc and take part in the research programmes of the Faculty research groups. Also, students have access to exchange programs within Europe (called Erasmus), and with other universities and companies around the world.

I hope that we can share our knowledge with you. Welcome to the Faculty of Chemistry!

**Yolanda Cesteros**  
Dean of Faculty of Chemistry





# Teaching information

**Language:** All the courses are taught in English. Teachers are accredited to teach in English.

**Class styles:** lectures, case studies, workshops, practices in laboratories, seminars, companies visiting and projects.

**Final marks:** will include evaluation of attendance, participation, assignments (both individual and group) and exams (middle and final).

**System:** Each academic course has 60 credits. One credit is equivalent to 25 hours of student work (in class, laboratories, library or at home). Approximately, 10 of the 25 hours are devoted to attend classes lectured by the teacher, whether in the classroom or in laboratories.

The Faculty staff consists of around 75 professors. The teaching vocation of our professionals guarantees that the subjects we teach are constantly being brought up to date and taught with the most advanced learning technologies. Personalised attention is guaranteed by low student-to-professor ratio and small class groups. Additionally, each student has a personal academic tutor who guides its academic progress along the studies.

The Faculty of Chemistry also takes part in international mobility programs (Erasmus), which enable students to spend stays at other universities or companies. Also, the centre signs more than 150 agreements per year with companies for student's practices.

A degree in Chemistry throws open the door to a wide and diverse professional future in sectors such as petrochemicals, food, pharmaceuticals, energy, the environment, cosmetics or research and teaching, among others. After finishing your bachelor's degree, you can continue studying at the URV for an MSc or a PhD recognized the world over.









# Bachelor's Degree in Chemistry

**Duration:** 4 Years

**Language:** English

**Number of credits:** 240 in total (60 per year)

**Website:** <http://www.fq.urv.cat/en/studies/quimica/>

**Academic coordinator:** Dr. Xavier López

E-mail: [javier.lopez@urv.cat](mailto:javier.lopez@urv.cat)

Tel. +34 977 55 82 83

Faculty of Chemistry

C/ Marcel·lí Domingo, 1

43007 Tarragona, SPAIN

- The courses that the students will have to complete before graduation are:

## FIRST YEAR

Chemistry I (6 credits)  
Chemistry II (6)  
Mathematics (9)  
Biology (6)  
Applied Statistics (6)  
Physics I (3)  
Physics II (6)  
Bridging courses in Chemistry (6)  
Biochemistry (6)  
Informatics and Documentation (6)

## SECOND YEAR

Analytical Chemistry (6 credits)  
Thermodynamics and Transport Phenomena (9)  
Inorganic Chemistry I (9)  
Instrumental Analysis (9)  
Organic Chemistry I (6)  
Crystallography (3)  
Molecular Structure (6)  
Inorganic Chemistry II (6)  
Organic Chemistry II (6)

## THIRD YEAR

Spectroscopy and Chemical Kinetics (9 credits)  
Separation techniques (5)  
Chemometrics (4)  
Analytical Chemistry Laboratory (3)  
Physical Chemistry Laboratory (3)  
Advanced Inorganic Compounds (9)  
Inorganic Chemistry Laboratory (3)  
Structural Determination (4.5)  
Organic Synthesis (4.5)  
Organic Chemistry Laboratory (3)  
Advanced Organic Chemistry Laboratory (3)  
Chemical Engineering (6)  
Citizenship (3)

## FOURTH YEAR

Materials Science (6 credits)  
External Internship Practices (12)  
Bachelor Final Work (12)  
**Elective courses (30 credits)\***





**Elective Courses\*:** Evaluation and Control of Quality (3), Molecular Modelization (3), Actual Topics in Inorganic Chemistry (3), Polymer Chemistry (3), Applied Enzymology (3), Nucleation and Crystal Growth (3), Industrial Organic Chemistry (3), Industrial Inorganic Chemistry (3), Applied Electrochemistry (3), Environmental Analysis and Monitoring (3), Economics and Business Management (3), Projects en Chemistry (3), Synthesis Design (3), Catalysis (3), Computational Chemistry (3), Special Topics in Analytical Chemistry (3), New Materials and Nanoscience (3)

*(\* Elective courses will be active only if more than 10 students are enrolled.*



# Ten reasons for studying at the Faculty of Chemistry, URV

## Quality assurance:



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## 1. Excellence in Teaching and Research

The Bachelor's degree in Chemistry at URV is the only one in Catalonia that, in addition to being accredited with the quality seal of EXCELLENT, certifies an interaction between research and excellent teaching given by the Agency for the Quality assurance of the Catalan University System.

- DOW Chemical has chosen URV as one of the 8 strategic universities in Europe, Africa, and Middle East, among 8000 universities, in the field of Chemistry.
- In the last years, URV has ranked top 401-500 universities in the world according to "Times Higher Education World University Rankings" and top 80 universities in the world with less than 50 years according to "Young University Rankings".
- URV is the best centre to study the Bachelor in Chemistry in Spain (61 universities), according to the U-ranking of Spanish universities, regarding research, teaching and technology transfer.
- Chemistry field at URV has ranked top 201-300 universities in the world according to "Shanghai Rankings" in the last years.
- URV, together with the Institute of Chemical Research of Catalonia (ICIQ) and the Catalan Centre for Chemical Technology (CTQC), are included in The Campus of International Excellence Southern Catalonia, an international benchmark in knowledge, research, and competitiveness within the areas of chemistry and energy.





## **2. Surrounded by a Chemical Park**

Tarragona hosts the largest Chemical Park of the south of Europe. The Faculty of Chemistry has a lot of interaction with international chemical companies (such as Repsol, Dow, BASF, Bayer, Clariant etc), where students spend some time performing the outdoors internship practices. Additionally, there is an important cluster of food, cosmetic and water treatment companies in the Tarragona area.

The graduates from the Faculty of Chemistry are highly valued as professionals not only because of their knowledge but also because of their initiative, their ability to relate to others, their communication skills and their capacity to adapt to changing environments.

The centre signs more than 150 agreements per year with companies for student's practices.





### 3. Bachelor, Master and PhD at the same school International double degrees.

You will be able to obtain not only your Bachelor's degree in Chemistry at the URV, but also you can continue studying to obtain MSc and PhD degrees if you decide to carry on with your studies at our university. All degrees obtained at the URV are official and recognized all around the world.

Additionally, you will have the possibility to obtain an official double international degree in Chemistry with prestigious international universities.

#### **Master programs**

- Master in Synthesis, Catalysis and Molecular Design (English)
- Master in Applied Chromatographic techniques.
- Master in Forensic Genetics, Physics and Chemistry.
- Master in Nutrition and Metabolism

#### **PhD programs**

- Chemical Science and Technology (English)
- Nutrition and Metabolism (English)





#### **4. Exchange programs**

You will have access to exchange programs within Europe (called Erasmus) and also with other universities and companies around the world, with which we have specific agreements. These programs will enable you to spend one or two semesters at different universities, and the courses taken will be recognised by the URV. Studying in other countries is an unforgettable experience: as well as making progress in your studies, you will know other countries, learn other languages and make new friends.

#### **5. Study Chemistry in English, enjoying a personalized attention**

The academic members of the Faculty have all been accredited to teach in English. The academics of the Faculty of Chemistry, composed of 75 professors, have a personalized relationship with the approximately 720 chemistry students. Each student has a personal academic mentor that guides him/her in the academic progress along the studies. The reduced number of students in each laboratory also enables an individualized practical education. Our compromise is your professional success.

#### **6. The possibility to study the 3rd most used language in the world**

In addition to study Chemistry in English, you will be able to take Spanish courses specially designed for international students. The Center for Hispanic Studies in Tarragona (Spain) coordinates the Spanish as Foreign Language academic programs of the URV. The Spanish language will open you the doors to the Latin-American world.





## **7. Living in a safe city with moderate living costs and mild climate**

Catalonia is one of the most developed regions in Europe. Tarragona is a very safe city, and the cost of life is much lower than in other cities like London or New York, where the courses are much more expensive. Tarragona has a 15-kilometre coastline. Tarragona's beaches are renowned for their extremely fine, golden sand: hence the region's name, "Costa Daurada", which means "Golden Coast" in Catalan. The mild climate means the water is perfect for swimming from June to September, and sun-lovers can lie out or simply stroll along the coast practically all year round.

## **8. Good travel connection**

From the URV, you can travel to Barcelona in less than 30 minutes, and to Madrid in around 2.5 hours using the high-speed train. Also plenty of buses link our city to the main cities in Spain. The network of motorways is excellent, and you also have two airports that connect the URV with the world.

## **9. Tarragona: A cultural experience**

The URV is located at the heart of Tarragona, which is a historical city from the Roman Hispania, and some of its constructions are 2000 years old. The city has 140.000 inhabitants, and it has been declared "World Heritage City" by UNESCO in November 2000. At the URV, you will be immersed in the architecture, art, history, landscape, traditions and other cultural experiences of the Mediterranean countries.





## **10. Enrolment and welcome package**

We offer many services to facilitate your enrolment and arrival to URV. The package includes: Help on the preparation of the documents before arrival; Issuing the visa in your country before starting; Pick-up at the airport and transport to the residence; Enrolment process at the Faculty of Chemistry and personal academic tutorial; Personal accompaniment (to obtain the documents needed in Spain, such as NIE, health card, mobile phone, bank account,...); help to find accommodation (1st month in a student flat or apartment); Cultural visits in Barcelona.



*Photo: Joan Capdevila Vallve*



For additional information, please don't  
hesitate to contact our delegate:

**Dr. Xavier López**

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43007 Spain

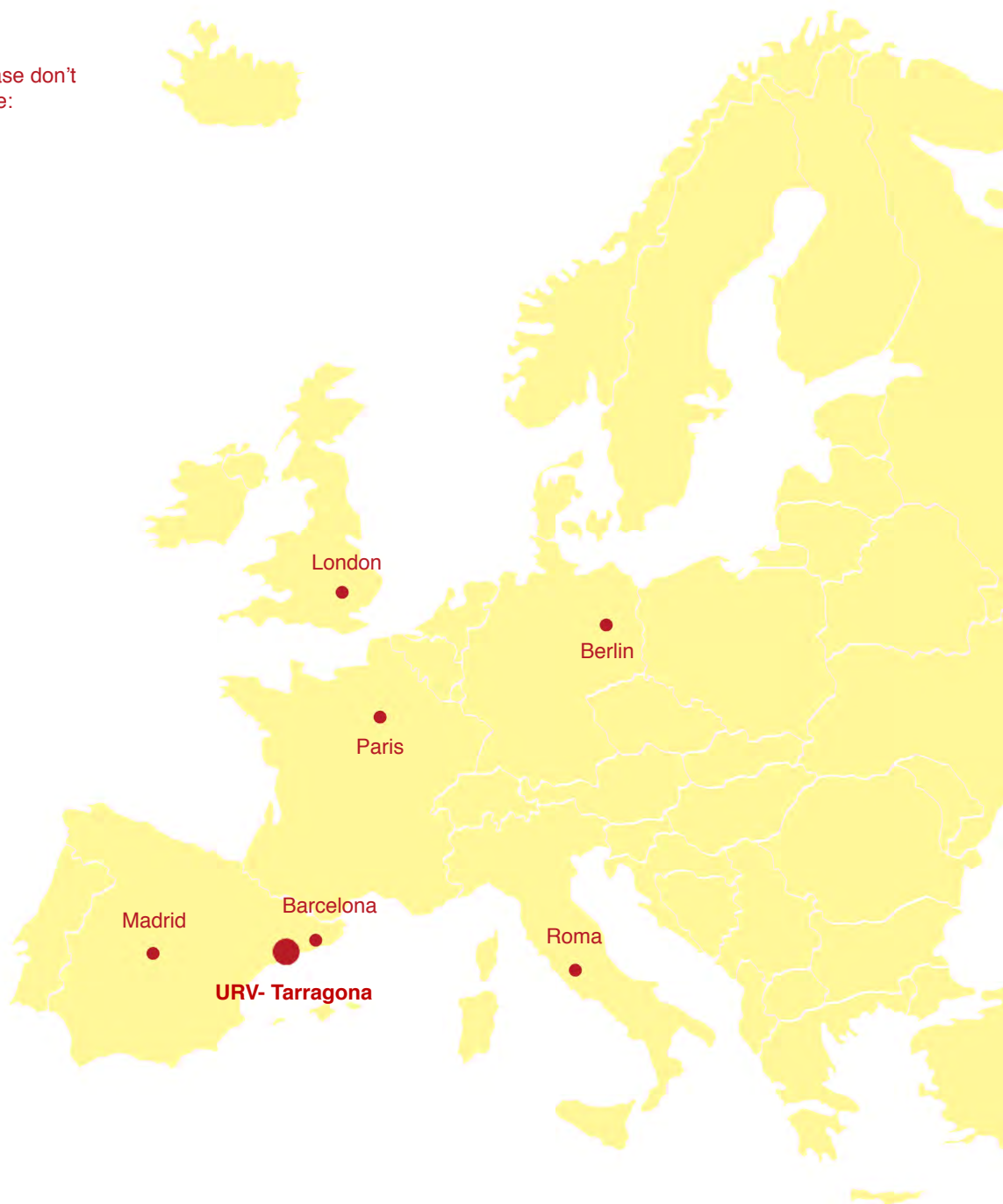
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or visit our web page:

[www.fq.urv.cat/en/](http://www.fq.urv.cat/en/)



**URV University location**