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# Student's Guide Spain



European Master Course in Advanced structural  
analysis and design using composite materials

Septembre 2022



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# DISCOVER SPAIN





GIRONA, SPAIN | FOTO BY SOFIE LAYLA

University of Minho  
University of Girona  
University of Naples  
INSA Toulouse/University Toulouse 3 - Paul Sabatier

# AND ALL ITS HISTORY







# HOST COUNTRY AND THE CITY OF GIRONA

## Spain

Spain occupies most of the Iberian Peninsula, stretching south from the Pyrenees Mountains to the Strait of Gibraltar, which separates Spain from Africa. To the east lies the Mediterranean Sea, including Spain's Balearic Islands. Spain also rules two cities in North Africa and the Canary Islands in the Atlantic.

The interior of Spain is a high, dry plateau surrounded and crisscrossed by mountain ranges. Rivers run to the coasts, creating good farmland. Still, the interior of the country gets very hot in summer and very cold and dry in the winter.

Plants and trees grow so well on the north-western coast, in Galicia and along the Bay of Biscay, that the area is called Green Spain. Rain, trapped by the mountains farther inland, is frequent. Beech and oak trees flourish here. Numerous coves and inlets break up the coastline.

## LOCATION



South-Western of France and Europe, Iberia Peninsula. Borders the Atlantic Ocean on north-west, Mediterranean Ocean to the south-east, Portugal to south-west. North of Morocco, North Africa.

**Total Area:** 505,990 km<sup>2</sup>  
**Water territory:** 5 240 km<sup>2</sup>  
**Coastline:** 4 964 km

### CLIMATE

*The climate of Girona is transitional Mediterranean. Winters are relatively mild and rainy, while summers are hot and sunny.*

### POPULATION

*46 795 062  
(year: 2022)*

### RELIGION

*Roman Catholic, 68.5%; Irreligious or atheist 26.4%; other religions, 2.6%  
(year: 2018)*

### LANGUAGE

*Spanish is the official and most widely spoken language in Spain, for 98.9% of the population. The estimated number of speakers worldwide ranges from 450 to 500 million.*



DANCE SEVILLA | FOTO BY STÉPHAN VALENTIN



MADRID | FOTO BY ALEVISION.CO



CASTELL DE BELLVER | FOTO BY PATRICK BAUM

The southern and eastern coasts of Spain, from the fertile Andalusian plain up to the Pyrenees, are often swept by warm winds called sirocco winds. These winds originate in northern Africa and keep temperatures along the Mediterranean coast milder than the interior.

Spain is a country with profound historical roots in Europe. Its identity and unique idiosyncrasies have been forged by a variety of phenomena, such as the discovery of the Americas and its neutral position during the two world wars. At the same time, however, there are strong parallels between Spanish history and the history of other European countries; although it never renounced its diversity, Spain emerged as a unified state at a very early stage and played a crucial role in some of the most brilliant episodes in modern European history.

At different moments in time, the land of present-day Spain has been sought after by the greatest empires: the Carthaginians and the Romans fought over it, the Arabs conquered it, and the Catholic Monarchs recovered it and made it into the most powerful empire in the world with the Spanish conquest of America. In fact, under King Philip II of Spain there was no time in which the sun was not shining on one part of Spain's territory, which stretched from the Philippines (guess which king they were named after!) to the Americas with Spain, Portugal, Flanders, Italy, and parts of what is now Germany in between.

However, the reign of Phillip II also marked the beginning of an era of economic and political decline, with wars both domestic and foreign. The American territories won independence over the course of the 1800s, culminating with Spain losing control of Cuba, Puerto Rico, and the Philippines just before the turn of the 20th century. These events have shaped a large part of the modern world into what it is today.

## GOVERNMENT INFORMATION

**Government type:** secular parliamentary democracy and constitutional monarchy

**Capital:** Madrid

### Administrative divisions:

Spain is divided into seventeen autonomous communities (comunidades autónomas), in addition to two African autonomous cities (ciudades autónomas) (Ceuta and Melilla). The communities have their own parliaments and regional governments with wide legislative and executive powers.



### Birth of Spain:

The Reconquista, the battle between the Christian kingdoms and the Moors lasted until 1492, and in 1512 the unification of present-day Spain was completed.

### Constitution:

The constitutional history of Spain dates back to the Constitution of 1812. After the death of dictator Francisco Franco in 1975, a general election in 1977 convened the Constituent Cortes (the Spanish Parliament, in its capacity as a constitutional assembly) for the purpose of drafting and approving the constitution. The Constitution has been amended twice. The first time, Article 13.2, Title I was altered to extend to citizens of the European Union the right to active and passive suffrage (both voting rights and eligibility as candidates) in local elections under the provisions of the Maastricht Treaty. The second time, in August/September 2011, a balanced budget amendment and debt brake was added to Article 135.



### Legal system:

The Spanish legal system is a civil law system based on comprehensive legal codes and laws rooted in Roman law, as opposed to common law, which is based on precedent court rulings. Operation of the Spanish judiciary is regulated by Organic Law 6/1985 of the Judiciary Power, Law 1/2000 of Civil Judgement, Law of September 14 1882 on Criminal Judgement, Law 29/1998 of Administrative Jurisdiction, Royal Legislative Decree 2/1995, which rewrote the Law of Labour Procedure, and Organic Law 2/1989 that regulates Military Criminal Procedure.

**Suffrage:** 18 years of age; universal.

### Executive branch:

*Head of Government:* Prime-Minister Pedro Sánchez (since 2018)

*Head of State:* Felipe VI or Philip VI is the King of Spain. He ascended the throne on 19 June 2014 upon the abdication of his father, Juan Carlos I. In accordance with the Spanish Constitution, as monarch, he is head of state and commander-in-chief of the Spanish Armed Forces with military rank of Captain General, and also plays the role of the supreme representation of Spain in international relation.



ROYAL PALACE OF MADRID, MADRID | FOTO BY JENS PETER OLESEN

### Elections:

The term of each chamber of the Cortes Generales—the Congress and the Senate—expires four years from the date of their previous election, unless they are dissolved earlier. The election decree shall be issued no later than the twenty-fifth day prior to the date of expiry of the Cortes in the event that the prime minister does not make use of his prerogative of early dissolution. The decree shall be published on the following day in the Official State Gazette (BOE), with election day taking place on the fifty-fourth day from publication. The previous election was held on 10 November 2019, which means that the legislature's term will expire on 10 November 2023. The election decree must be published in the BOE no later than 17 October 2023, with the

election taking place on the fifty-fourth day from publication, setting the latest possible election date for the Cortes Generales on Sunday, 10 December 2023.

The prime minister has the prerogative to dissolve both chambers at any given time—either jointly or separately—and call a snap election, provided that no motion of no confidence is in process, no state of emergency is in force and that dissolution does not occur before one year has elapsed since the previous one. Additionally, both chambers are to be dissolved and a new election called if an investiture process fails to elect a prime minister within a two-month period from the first ballot. Barred this exception, there is no constitutional requirement for simultaneous elections for the Congress and the Senate. Still, as of 2021 there has been no precedent of separate elections taking place under the 1978 Constitution, with governments having long preferred that elections for the two chambers of the Cortes take place simultaneously.

**Legislative branch:**

The legislative branch is made up of the Congress of Deputies (Congreso de los Diputados), a lower house with 350 members, elected by popular vote on block lists by proportional representation to serve four-year terms, and the Senate (Senado), an upper house with 259 seats of which 208 are directly elected by popular vote, using a limited voting method, and the other 51 appointed by the regional legislatures to also serve four-year terms.

**Executive branch:**

It consists of a Council of Ministers presided over by the Prime Minister, who is nominated as candidate by the monarch after holding consultations with representatives from the different parliamentary groups, voted in by the members of the lower house during an investiture session and then formally appointed by the monarch.

**Judicial branch:**

The Supreme Court of Spain (Tribunal Supremo) is the highest judicial body in Spain. Composed of five chambers, it has cognizance of all jurisdictional orders and its rulings cannot be appealed, except to the Constitutional Court, when one of the parties claims that their constitutional rights have been infringed.

The judicial branch decides the constitutionality of federal laws and resolves other disputes about federal laws. However, judges depend on our government's executive branch to enforce court decisions. Courts decide what really happened and what should be done about it.

## Catalonia

Catalonia is an autonomous community of Spain situated in the northeast of the Iberian Peninsula. The Pyrenees mark its northern border, the eastern border is the Mediterranean Sea, the west borders with Aragon and the south with Valencia.

Catalonia identifies itself as a nation, with this word meaning a geographical and historical area whose inhabitants share a common language and a common culture.

Catalonia used to be a country in its own right. Its history, former political strength and independence are all factors that have contributed to a culture that is quite distinct from others in Spain. Catalan culture is a Mediterranean one, influenced more by the Greek and Roman settlements than by the Moorish heritage in the rest of Spain.

### CLIMATE

*The climate is distinctly continental. Girona is within the temperate zone. Annual temperature: average 14°C, high 36°C, low -3°C. Temperature changes are common and there are usually marked changes in temperature between night and day.*

*Weather forecasts for the city of Girona can be found at this link:*  
<http://www.meteo.cat/prediccio/municipal/170792>

### POPULATION

*About 6 million inhabitants, 15% of the population and 25% of industry of the whole of Spain.*

### RELIGION

*Christianity (57,4%), No religion (38,9%), Others (2,5%), Not answered (1,3%).*

### LANGUAGE

*There are two official languages in Catalonia: Catalan, a Romance language derived from Latin, and Castilian or Spanish.*



COSTA BRAVA, CATALONIA | FOTO BY JORGE SALVADOR

As an autonomous community in the modern political structure of Spain, Catalonia has its own governmental institution, the Generalitat, which is comprised of the



Parliament, the President of the Generalitat and the Executive Council or Government.

There are two official languages in Catalonia: Catalan, a Romance language derived from Latin, and Castilian or Spanish. With knowledge of French, Italian or Spanish any visitor should find it easy to understand Catalan.

It is well known that Catalonia is of outstanding economic importance to the rest of Spain. With a surface area of around 32,000 km<sup>2</sup> (an area similar to Belgium), which is equivalent to only 6.3% of the whole of Spain, it nevertheless has 15% of the population (about 6 million inhabitants) and 25% of its industry. In European terms, the economy of Catalonia is larger than that of Portugal or Ireland, and is comparable to the Greek economy. Catalonia is considered to be the "economic motor of Spain". Together with Rhone-Alps, Lombardy and Baden-Württemberg, Catalonia is also one of the so-called Four Motors of Europe.

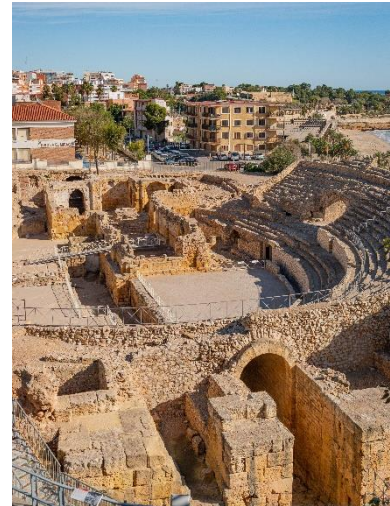
**Coastline:** 692 km (scale 1:5000)

**Area:** around 32,000 km<sup>2</sup>

### *The city of Girona*

Girona is one of the four provinces that, together with Barcelona, Tarragona and Lleida, make up the Autonomous Community of Catalonia. Each province, in turn, is divided into counties. The counties in the province of Girona are: El Gironès, La Selva, El Pla de l'Estany, L'Alt and El Baix Empordà, La Garrotxa, El Ripollès and La Cerdanya. They contain world famous sites.

The Girona coast, extending down through L'Alt and El Baix Empordà, is universally known as the Costa Brava, one of the preferred holiday destinations for tourists from all over the world. Stretching more than two hundred kilometres, its untouched natural areas and botanical gardens alternate with fishing villages and cosmopolitan housing developments. In L'Alt Empordà the Dalí Museum in Figueres is one of



TARRAGONA | FOTO BY SANTIAGO BOADA

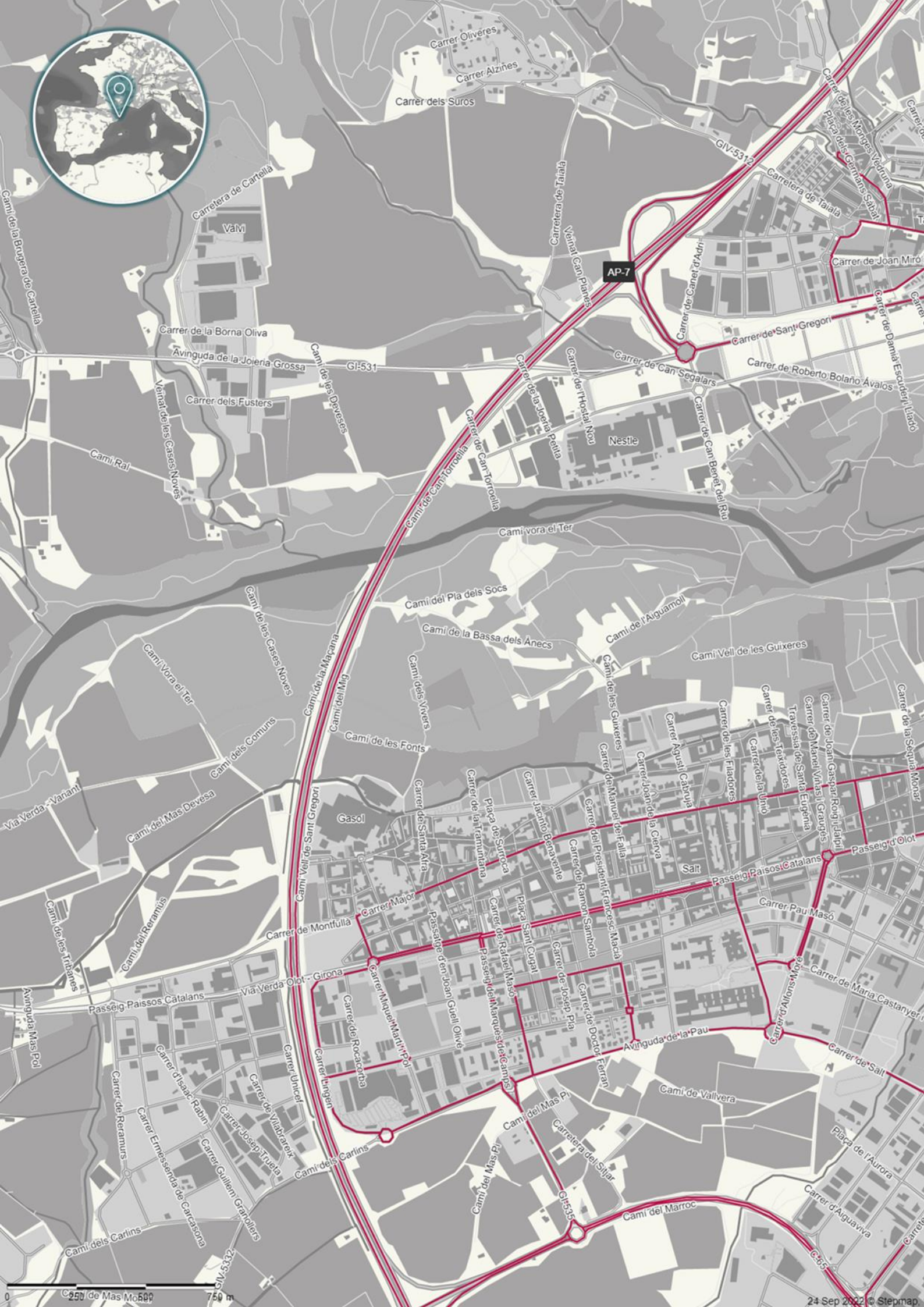


BARCELONA | FOTO BY NICK WEHRLI

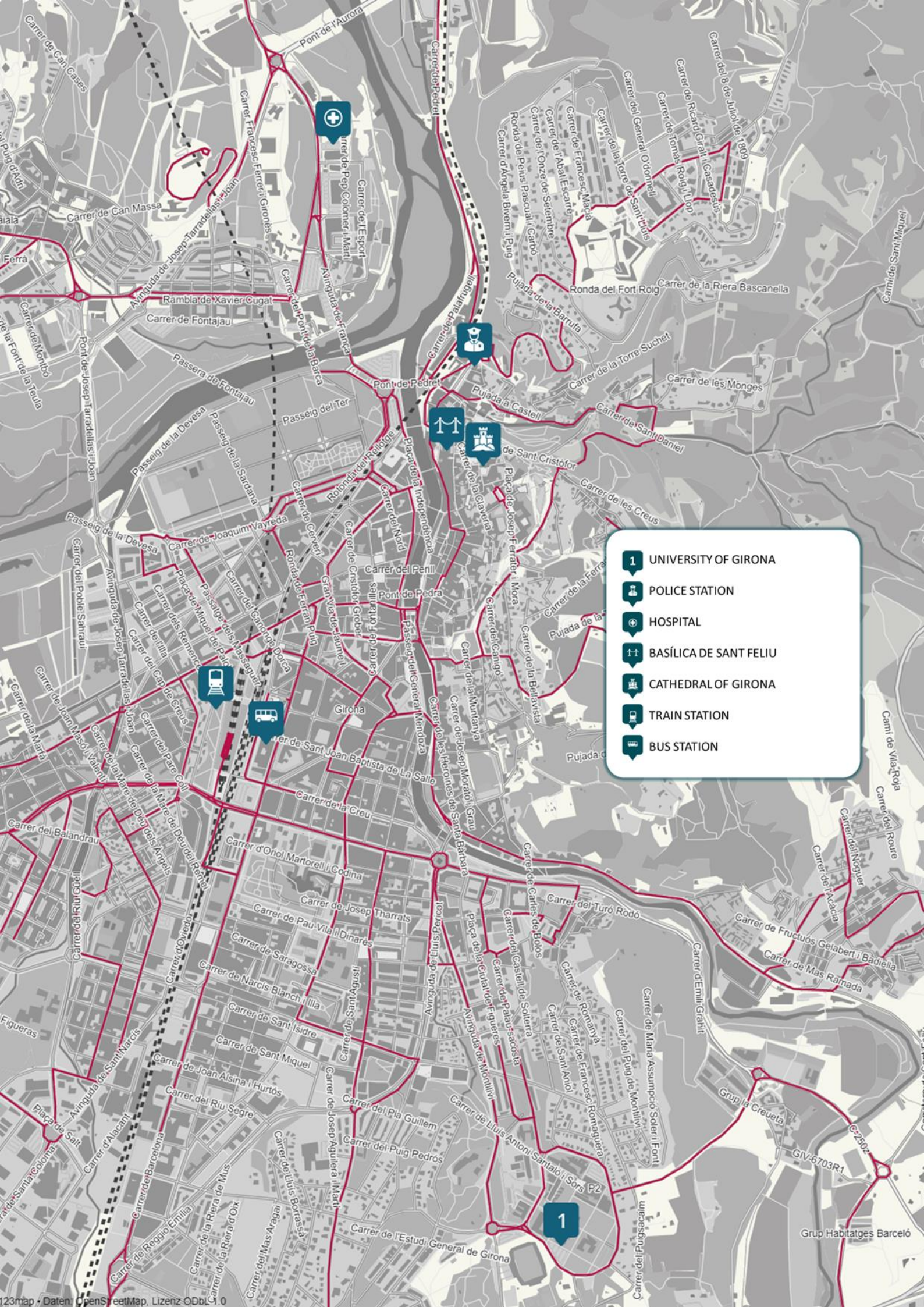


GIRONA | FOTO BY SANTIAGO BOADA









- 1 UNIVERSITY OF GIRONA
- POLICE STATION
- HOSPITAL
- BASÍLICA DE SANT FELIU
- CATHEDRAL OF GIRONA
- TRAIN STATION
- BUS STATION



Spain's most visited museums, and ancient times are present in Empúries, the site of Roman and Greek remains. Inland there are extremely varied and forested mountains (La Cerdanya), where you can ski in winter, protected natural parks, one of the most important volcanic areas in Europe (La Garrotxa) and a lake that hosted the rowing events of the 1992 Olympic Games (Banyoles, El Pla de l'Estany).



GIRONA | FOTO BY MANUEL TORRES

The city of Girona is the capital of the province. It is located in El Gironès, on the banks of the Ter and Onyar rivers. With a population of about 102.000 inhabitants (2021), it is a small city that still conserves the quality of life that has been lost in some larger ones. It is a bustling administrative and university centre, a pole of commercial and cultural attraction, with the highest quality of life in Catalonia and almost all of Spain. It is located in a privileged place, hardly an hour from Barcelona or the French border and about two from the Pyrenees. Founded by the Romans, it is one of the oldest cities in Catalonia with more than 2,000 years of history. European history! Even the Seat of Carlemany (Charlemagne, Karl de Große, Karel de Grote...) is in the Cathedral. But that's not the only treasure in the city. Its exceptional old part is one continuous monument of temples, belfries, houses, palaces and walls, and it contains one of the best-preserved medieval Jewries in Europe.

And those are only some of the reasons that make Girona a great place to be! You will discover the others.

More information (in English and Catalan) about Catalonia in general and the city of Girona can be found at the following URLs:

 <https://en.costabrava.org/>


 <https://web.girona.cat/>

## TRAVELLING IN GIRONA

Access to the various **UdG campuses** is easy, whether by taxi, by bus or, given the size of the city, on foot. Also, if you are a student at the University of Girona, you can travel by bus in Girona during the whole academic year (September - June) for only €115. For more information, visit the webpage:

 <https://www.udg.edu/en/compromis-social/Arees/Sostenibilitat/En-que-treballem/Mobilitat/Vine-a-la-UdG-en-transport-public>

If you need a bike during your stay in Girona the UdG can let you one. All the UdG community members can use a university bike during the academic course, for a maximum of a five days' period. More information:

 <https://www.udg.edu/en/compromis-social/Arees/Sostenibilitat/En-que-treballem/Mobilitat/Vine-a-la-UdG-en-bici>

There is also a public bike system in Girona called Girocleta:

 <https://www.girocleta.cat>

**More information about mobility:**

 <https://www.udg.edu/en/compromis-social/arees/sostenibilitat/en-que-treballem/mobilitat>

## TRAVELLING OUTSIDE GIRONA

When you travel outside Girona you can use a train or a bus. Both are quite cheap and reliable. You will be able to find connection to every village of the country, especially by train.

The train and bus station of Girona are located at: Plaça d'Espanya, s/n.

Train timetables from Girona to most of nearby cities (e.g. Barcelona):

 <https://www.renfe.com/es/en>

Bus timetables from Girona to most of nearby villages:

 <http://www.teisa-bus.com/es/index.html>

# UNIVERSITY OF GIRONA

The University of Girona (<https://www.udg.edu/en/>) is a public institution and part of the Catalan public university system. It is devoted to excellence in teaching and research and involved in social development and progress through the creation, transmission, dissemination and criticism of science, technology, the humanities, the social and health sciences and the arts. It is an economic and cultural driver of the region with a universal mission and it is open to all the world's traditions, advances and cultures.



The historical forerunner to the University of Girona, the Estudi General, was founded in 1446 by the King Alfonsse the Magnanimous, who granted Girona the privilege of awarding degrees in grammar, rhetoric, philosophy and theology, law and medicine. The municipal syndics and the Church were responsible for the teaching but the classes did not start officially until 1572, in what is now known as the Les Àligues (Eagles) building, which was purpose-built as the seat of the university. The university studies spread with an excellent reputation until 1717. Then the University was closed because of the Nova Planta Decree and the loss of Catalonia's political identity.

Throughout the **19th century**, and as a result of the liberal revolution, the City Council promoted the so-called "Free University of Girona", which offered studies in Law and pharmacy until 1874.

The **recent history of the University of Girona** is linked to the Escola Normal de Mestres, a teacher training college, and especially to the initiatives carried out in the 1960s to re-establish university studies in Girona. That was when the University College of Girona and the Polytechnic School were created, attached, respectively, to the Universitat Autònoma de Barcelona and the Universitat Politècnica de Catalunya. The Estudi General was subsequently restored offering studies in business, the humanities, science and social sciences. Finally, on 12 December 1991, the Catalan



Parliament approved Act 35/1991, creating the new University of Girona, with contributions from the different university cultures that have turned Girona into a multidisciplinary benchmark.

**These 30 years** of history represent a strengthening of the academic offering, an increase in the number of students (from 7,000 in 1992 to 15,300 in 2020), more research and a greater presence both internationally and in the region, as well as the expansion of the campuses, now located in the city centre, Montilivi and Barri Vell.

UdG enjoys plentiful facilities in its four Campus:



<https://www.udg.edu/en/coneix/la-udg/campus-universitari>

The FRP++ is held in the Campus Montilivi:



<https://www.udg.edu/en/coneix/La-UdG/Campus-universitari/Montilivi>

More information about the UdG at:



<https://www.udg.edu/en/coneix/la-udg>



# HOW TO GET TO GIRONA

## By plane

### Girona-Costa Brava airport:

Girona-Costa Brava airport is located at approximate twelve kilometers from Girona. This airport nowadays receives flights from different European cities, mainly by the Ryanair Company. Pay attention: many times those companies write Girona-Costa Brava (Barcelona) as the name of the airport.

The trip between the airport of Girona and the city can be done by taxi or by bus.

If you take a taxi the price can be around 30-35€.

There is a bus line that covers from Airport to Girona city center. Bus departures are every hour from 5h30 to 0h30 (you can find the timetable in the following web page). The ticket sales office is located on the ground floor, in the arrivals hall, beside the car hire offices. Price is 2.75€ one-way ticket.

 <https://www.sagales.com/en>

### Barcelona “El Prat” airport:

However, so many times, getting to Girona by plane means arriving at the airport of Barcelona “El Prat” and coming to our city from there. There are two ways to reach Girona from BCN airport: by bus or by train.

The bus service from the Barcelona airport “El Prat” to Girona city is run by the company *Sagalés Airport Line*. The trip lasts 1.5 hours and price is 19 Euros. You can make the reservation or see the timetable in:

 <https://www.sagalesairportline.com/en>

To use the **train option**, you must catch a train- shuttle from the airport to the *Barcelona- Sants* station, where you can change train for Girona. The train-shuttle is next to the terminal T2-B and departures are every 30 minutes. If you arrive on terminal T1 you must take a bus-shuttle until T2 (you can find the bus out of T1).

In spite of changing trains, when you buy the ticket at the airport station, you can buy it for the whole Barcelona Airport-Girona trajectory.

Be aware that the last train from Barcelona-Sants to Girona is at 22h56. There is different types of trains: Regional and MD (they take 1.5 hours aproximadly) and High Speed Trains- AVE/ AVANT- (more expensive) but they take only 36 minutes.

You can find here timetables and prices:

 <http://www.renfe.com/EN/viajeros/index.html>

## **By train**

The City of Girona is well linked by rail with numerous trains to and from Barcelona as well as to and from EUROPE. You will find that at Girona station there are two types of trains, the Regional or Media Distancia, and the high-speed (AVE). On the website and at the ticket offices, you can buy tickets for both types, with the same procedure, but the physical access to the platforms are separated.

Long distance journeys are normally covered by the high speed (Madrid and other European cities). Although these have a higher price, but you can also find these trips for "low cost" with the names AVANT and AVLO.

For further information:



+34 912 320 320



<https://www.renfe.com/es/en>

## **By road**

Girona connects directly with Europe and Barcelona with Motorway AP-7 and National Highway A-2. There also exists a coach-lines providing service from a wide range of European cities with a stop in the bus station of Girona.



# A FUTURE WITH COMPOSITES

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WIND TOWER | FOTO BY GONZ DDL

# EUROPEAN MASTER IN ADVANCED STRUCTURAL ANALYSIS AND DESIGN USING COMPOSITE MATERIALS

The AMADE ([Analysis and Advanced Materials for Structural Design](#)) research group of the University of Girona welcome you to the European Master in Advanced Structural Analysis and Design using Composite Materials.

The European Master in Advanced Structural Analysis and Design using Composite Materials - FRP++ - is a one-year, full-time intensive academic programme (60 ECTS) leading to the awarding of a double master degree. The FRP++ offers an advanced integrated educational programme covering the key issues of the Composites industry with a particular focus on i) materials and manufacturing processes, ii) mechanics and modelling, iii) analysis and design, iv) inspection, diagnosis, repair and strengthening, and v) sustainability and life cycle analysis.

The Master combines the diverse expertise of leading European HEIs in the related fields (University of Minho - UMinho, the University of Girona - UdG, the University of Naples Federico II - UNINA and Institut National des Sciences Appliquées de Toulouse/University Toulouse III Paul Sabatier - INSA/UPS) to offer an excellent education proposal oriented to a multidisciplinary understanding of structural Composites through the involvement of specialists from complementary fields (engineers, materials science and others). The six coursework units (1st semester), held on a rotating basis among partners, are concentrated in two countries each year and dissertation work (2nd semester) is divided by all involved institutions. Students carry out the entire coursework in one location and the dissertation in another location. The curriculum is the same, no matter the student mobility track. The programme also includes the Integration Week (November) and the annual FRP++ workshop (May) where all students will meet together in Consortium members that do not host any coursework in this academic year.

Academic Year	Coursework	MSc Disertation	Integration week	FRP++ Workshop
2022/2023	UMinho, UdG	All	UNINA	INSA/UPS
2023/2024	UNINA,INSA/UPS	All	UMinho	UdG
2024/2025	UMinho, INSA/UPS	All	UdG	UNINA
2025/2026	UNINA, UdG	All	INSA/UPS	UMinho

Through an excellent education, students will gain cutting-edge knowledge on structural Composites in a research-driven environment, maintaining close collaboration with industry and an important focus on solving practical problems, to compete in a highly demanding market, such as construction, aerospace and aeronautics, automotive, wind energy, among others, where Composites are fundamental. The FRP++ combines the latest research advances with the development of activities related to professional practice.

## Structure and content

The study programme is composed of seven course units: i) five sequential units (FRP++1 to FRP++5) and ii) one project-based learning unit (FRP++6) along the 1st semester (October to February) of 5 ECTS - 45 hours of lectures and 95 hours of independent student work; and, iii) one dissertation (FRP++7) during the 2nd semester (March to July) of 30 ECTS - 45 tutorial hours and 795 hours of independent student work. The curriculum is the same, no matter the student mobility track.

The units FRP++1 to FRP++5 are conceived as an in-class/lab approach, with a mix of theory and applications and laboratory experiments, lasting 3 consecutive weeks each one. Unit FRP++6 includes field visits, seminars and two comprehensive case study projects (groups of ~4 students), which include project conception, simulation, detailing and reporting, using 'Project Based Learning' approach. In these integrated projects, students are facing "challenges" with the need of conducting search, applying the knowledge acquired in the remaining. FRP++6 runs in parallel with the remaining units (1 to 5) – along the 1st semester. One of the case study projects will developed virtually involving students from both Institutions hosting the coursework of the current academic year (to promote the capacity of developing teamwork virtually). The dissertation (FRP++ 7) aims to develop research and/or professional competences in the field of Structural Analysis and Design using Composite Materials. The general description of the course/units is as follows:

### FRP++1 COMPOSITE MATERIALS IN THE INDUSTRY

The unit covers important topics on the composite materials in the construction and mechanical engineering. It includes critical aspects such as materials and processes, types, characteristics and processing of composite materials (including additive manufacturing - AM), adhesives and manufacturing process. Methods for assessing the properties of composite materials are introduced. The comparison between composite materials and traditional materials is also underline. Critical aspects associated to the computer aided simulation of composite of composite materials and structures are introduced, as well as critical aspects on their sustainability and life cycle analysis.

#### Main learning objectives:

- Get an overview about the use of composite materials in Construction and Mechanical Engineering;
- Be able of selecting proper materials and processes;
- Understand critical aspects in terms of types, characteristics and processing of composite materials, adhesives and manufacturing processes;
- Know the advantages and disadvantages of composite and traditional materials;
- Understand the existing methods for assessing the properties of composite materials;
- Understand critical aspects of computer aided simulation of composite materials and structures;
- Be able to perform a life cycle analysis of composite materials and structures.

### FRP++2 MECHANICS OF COMPOSITE MATERIALS

Unit covers important topics about the mechanical and structural behaviour of composite materials. It includes key aspects such as transversally isotropic elastic



behaviour, laminates, failure and damage, delamination and long-term effects. The analysis of composite materials in terms of structural behaviour with finite element simulations is also introduced. The combination of these tools provides the basis for the design process with composite materials for construction and mechanical applications.

**Main learning objectives:**

- Get an overview about the mechanical and structural behaviour of composite materials;
- Be able to infer the composite mechanical properties from constituent ones;
- Be able to predict the structural behaviour of composite laminates;
- Be able to anticipate damage and failure in composites and predict post-failure behaviour;
- Understand critical aspects of hygrothermal, long-term and ageing effects on composite materials;
- Be able to simulate the mechanical behaviour of composites with Finite Elements Analysis.

**FRP++3 ADVANCED MODELLING AND COMPUTER AIDED DESIGN**

Description: Unit aims to complete the knowledge from unit FRP++2, providing to the student the capabilities to perform advanced analysis of the mechanical (and/or multiphysics) performance of composite structures. The syllabus also aims to provide knowledge on the optimal design of a composite component, mainly laminates, and the definition of the manufacturing plan (including discussion on AM). Optimization of composites structures is achieved with computer aided. Some examples of how a software can help optimizing the processing, manufacturing and mechanical behaviour of composite materials are provided.

**Main learning objectives:**

- Be able to make use of computer software to analyse various aspects of composite structure design and process;
- Be able to analyse the nonlinear behaviour of composites structures accounting for both geometric and material nonlinearities;
- Be able to define the scale of the analysis models and perform simulations at different scales;
- Understand the modelling of manufacturing: thermocinetics, thermochemical and thermomechanical modelling;
- Be able to design a composite component and prepare the cutting plan understand critical aspects on optimization of the design of the composite component;
- Be able to perform a life cycle analysis of the designed composite component.

**FRP++4 DESIGN OF STRUCTURES WITH FRP MATERIALS**

The syllabus covers important topics on the design of structures with FRP materials. Initially it includes the basis of design of structures with FRP materials transversal topic. Then, all the detailed aspects on the design of reinforced concrete structural elements with FRP, as well as on the design of profiles and sandwich structures, as well as connections and joins is introduced, including GAP method, according to the most recent codes (e.g. CEN TS). Afterwards, the critical aspects on the assessment of life cycle of structures designed with FRP materials are dealt with.

#### Main learning objectives:

- Get an overview about the protocol followed in the design of structures with FRP materials;
- Be able to design reinforced concrete structural elements with FRP bars;
- Be able to design pultruded FRP profiles and sandwich structures;
- Design and machining innovative composite structures;
- Be able to perform a life cycle analysis of structures designed with FRP materials.

### **FRP++5 INSPECTION, DIAGNOSIS AND REPAIRING/STRENGTHENING EXISTING STRUCTURES**

The syllabus covers important topics on the inspection, diagnosis, repairing and strengthening of existing structures. Prior the intervention in the existing structures, fundamental aspects on the inspection and diagnosis of existing structures are introduced. Then, main aspects on the strengthening of existing structures with composite materials (basis of design, strengthening, installation, control and maintenance) are presented, following recent codes/guidelines (e.g. ACI, CNR, ENs, fib). Similar strategies are used for introducing the repairing of existing structures. The critical aspects on the assessment of life cycle of structures designed with FRP materials are given. Finally, case studies are introduced in order to highlight all the involved issues on inspection, diagnosis, repairing and strengthening of existing structures.

#### Main learning objectives:

- Be able to perform inspection of existing structures;
- Be able to perform diagnosis of existing structures;
- Be able to design solutions in composite materials for the repair of existing structures;
- Be able to design solutions in composite materials for the strengthening of existing structures;
- Be able to develop life cycle analysis on repairing and strengthening existing structures.

### **FRP++6 INTEGRATED PROJECT**

The unit includes two comprehensive case study projects, field visits and seminars. The two case study projects are i) the development of a project which includes analysis, design and detailing of complex structures in composite materials used in civil and mechanical engineering, and ii) the analysis, design and detailing of repairs and/or strengthening in complex structures in composite materials used in civil and mechanical engineering. The second project will be developed among the students of the two involved coursework hosting Institutions, while first one will be developed only with students of the local hosting Institution. Skills and competences will be ensured during the curricular unit period, due to the teaching methodologies adopted. The unit is based in a specific learning model, where the development of an integrated project with composite materials is pursued. This learning model allows students to develop their capacity to interrelate knowledge and seek for practical solutions applied in real case studies. On the other hand, since this curricular unit runs throughout the semester, it will take advantage of the knowledge collected in the other curricular units, allowing to generate additive knowledge.



#### Main learning objectives:

- Get additional knowledge in civil and mechanical engineering with composite materials;
- Be able to develop an integrated project of a structure with composite materials;
- Be able to develop an integrated project on the repairing and/or strengthening of an existing structure with composite materials;
- Develop transversal skills and competences.

#### FRP++7 DISSERTATION

It is the objective of this curricular unit that students develop search work on concepts, models and instruments related to the research work to be investigated. This research work will allow the development of the original research work, in which the student will have to integrate the knowledge acquired throughout the course, deal with complex issues, in multidisciplinary contexts, developing solutions and reflections on the subject under study. At the end the student shall proceed to a synthesis work in order to write the dissertation. During the development of the dissertation, internships at Associated Partners facilities are whenever possible, desirable.

#### Main learning objectives:

- Plan the research work;
- Develop the research work.

#### ECTS

The ECTS - European Credit Transfer System - was developed by the European Commission in order to provide common procedures to guarantee academic recognition of studies abroad. It provides a way of measuring and comparing learning achievements and transferring them from one institution to another.

ECTS Grade	% of successful normally achieving the grade*	University of Girona Conversion Scale	Definition
A	17	9.0 – 10.0	<b>EXCELLENT</b> outstanding performance with only minor errors
B	46	8.0 – 8.9	<b>VERY GOOD</b> above the average standard but some errors
C	27	7.0 – 7.9	<b>GOOD</b> generally sound work with a number of notable errors
D	6	6.0 – 6.9	<b>SATISFACTORY</b> fair but with significant shortcomings
E	4	5.0 – 5.9	<b>SUFFICIENT</b> performance meets the minimum criteria
FX	-	3.0 – 4.9	<b>FAIL</b> some more work required before the credit can be awarded
F	-	0.0 – 2.9	<b>FAIL</b> considerable further work is required

*\*percentage of success of the master's degrees of the Polytechnic School of the University of Girona for the 2021-2022 academic year.*

The ECTS system is based on the principle of mutual trust and confidence between the participating higher education institutions. The few rules of ECTS, concerning the information on courses available (ECTS Information Package), the agreement between the home and host institutions establishing the programme of study to be

taken (Learning Agreement), the use of credit units to indicate the student's workload (ECTS credits) and the use of a Transcript of Records, which shows the student's learning achievements in a way which is commonly understood and easily transferable from one institution to another, are set out to reinforce this mutual trust and confidence.

## Academic Year

Like it was referred before, the coursework (1st semester), held on a rotating basis among partners, are concentrated in two countries each year and the dissertation work (2nd semester) is divided by all involved institutions.

Academic year	Period	University of Minho	University of Girona	University of Naples	INSA/UPS
2022-2023	October-March (coursework)	X	X		
	March-July (dissertation)	X	X	X	X
2023-2024	October-March (coursework)			X	X
	March-July (dissertation)	X	X	X	X
2024-2025	October-March (coursework)	X			X
	March-July (dissertation)	X	X	X	X
2025-2026	October-March (coursework)		X	X	
	March-July (dissertation)	X	X	X	X

## National Holidays

- 2022, September 11: National Day of Catalonia (regional public holiday)
- 2022, October 12: El Pilar (national public holiday)
- 2022, October 29: Sant Narcís (local festival)
- 2022, October 31: Non-teaching day (long weekend)
- 2022, November 1: All Saints
- 2022, December 6: Day of the Constitution (state-wide public holiday)
- 2022, December 8: Immaculada Conception Day (national public holiday)
- 2022, December 9: Non-teaching day (long weekend)
- 2022, December 25: Christmas
- 2022, December 26: St. Stephen's Day (national holiday)
- 2023, January 1: New Year's Eve (national holiday)
- 2023, January 6: Kings Day (national holiday)
- 2023, April 10: Easter Monday (national holiday)
- 2023, April 21: UdG Annual Festival (UdG celebration)
- 2023, May 1: Labour Day
- 2023, June 24: Sant Joan (regional public holiday)
- 2023, July 25: Sant Jaume (local public holiday)



## THE INTERNATIONAL RELATIONS OFFICE

The International Office of the University of Girona aims to facilitate the implementation of the university's Internationalisation Strategy, entitled #UdGlobal. So, its main functions are:

- To act as administrative service reference for the Institutions, mainly in other countries, that would like to collaborate with ours.
- To ensure the coordination of the University of Girona's internationalisation initiatives described in the Strategy and which cover areas such as Cooperation and volunteer work, Teaching, Internships or Promotion and to take part in the initial revitalisation of strategic internationalisation projects



It is directly responsible for the management of the mobility programmes in which the University of Girona takes part, in all their aspects, and for coordinating the reception and support services for new PAS and TRS students, mainly international, in accordance with the reception planning approved by the university's governing body.



Mòduls centrals  
Mòdul 20, Campus Montilivi  
17003 - Girona



+34 972 418 028



<https://www.udg.edu/en/internacional/>





[incoming.oi@udg.edu](mailto:incoming.oi@udg.edu)



## LANGUAGE AND CULTURE COURSE

At the University of Girona most subjects are taught in Catalan, but some are taught in Spanish or in English, and are open to exchange/mobility students. The FRP++ master is 100% taught in English.



Since Catalan, the most spoken language in our University and in the region, is a minority language, the UdG's International Office organises, jointly with the Modern Languages Service, the **Introductory Course on Catalan Language and Culture** in order to provide exchange/mobility students with some basic skills in that language, which can be useful for daily life.

 *Introductory Course on Catalan Language and Culture*  
 <https://www.udg.edu/ca/internacional/Would-you-like-to-come/All-steps-at-a-glance/Language-and-culture>

Students who wish to take coursework at the University of Girona have the Interc@t multimedia Catalan language platform at their disposal. This programme gathers a large number of Catalan language resources into a single web page and is highlighted by the interactive course '**Speakc@t**', which enables students to familiarise themselves, before they arrive, with the basic vocabulary and language structures found in the most common conversational situations. The address is **www.intercat.cat** and its access is totally free. In addition, students will have access to tutors who can guide them through the material and help them with any doubts they may have.

 *Interc@t multimedia Catalan language platform*  
 [www.intercat.cat](http://www.intercat.cat)

The **Modern Languages Service** offers three language levels: I (basic), II (intermediate) and III (advanced). The content complies with that determined by the European Council through the ALTE (Association for Language Testers in Europe). The first level Catalan course (free for exchange students) is offered before the beginning of each semester (in September and in January) and enables students to follow coursework after one month of instruction. This training is complemented by the language exchanges offered to students through a speaking exchange programme with Catalan students who are also learning languages. For more detailed information, please visit **Language exchange information**.

 *Modern Languages Service*  
 <https://www.udg.edu/en/slm/Intercanvis-linguistics/Informacio-practica>

# UNIVERSITY FACILITIES

## Libraries

Universitat de Girona Library comprises three campus libraries and technical services.


The libraries at the Barri Vell, Montilivi and Centre campuses provide services and bibliographic sources in line with the degrees taught in the faculties and schools located there. The technical services, comprising five units (Digital Collection, IT, Technical Processing, Projects and Communication, Learning Support) provide support and help the libraries deliver their services.


The single library structure enables us to guarantee the same quality of service on all the campuses and enables the free circulation of documents and people, irrespective of the campus they belong to.

The library is a learning and research resource centre that makes a series of information resources available to the university community (magazines and e-books, databases, special archives, institutional storage), as well as providing services (document loans and acquisitions, advice and education, research support services, cultural activities) in order to contribute to the whole community attaining their objectives with optimum levels of quality and excellence.

With premises at each campus, it offers modern open facilities seven days a week and dedicated spaces for individual and group study.

 *Campus Montilivi Library,  
C/Maria Aurèlia Capmany i Farnés, 67  
17003 Girona*

 +34 972 41 83 98

 +34 608 272 130 (WhatsApp)

 [biblioteca.montilivi@udg.edu](mailto:biblioteca.montilivi@udg.edu)

 <https://biblioteca.udg.edu/en>





## Health Service

There is a Student Health Service, free of charge, located in the Campus Montilivi, where the FRP++ Master is conducted.

-  *Mòduls centrals*  
*Mòdul 23, Campus Montilivi*  
*17003 Girona*
-  *Monday to Friday 9h30 to 13h45*  
*Tuesday 15h30 to 16h30*
-  *+34 972 418 077*
-  [\*compromis.social@udg.edu\*](mailto:compromis.social@udg.edu)
-  [\*https://www.udg.edu/en/viu/udgsalut\*](https://www.udg.edu/en/viu/udgsalut)

**IN CASE OF EMERGENCY, IF YOU WANT TO CALL AN AMBULANCE, THE POLICE OR THE FIRE DEPARTMENT YOU SHOULD DIAL THE NATIONAL EMERGENCY NUMBER 112**

## Computer Areas

There are computers in the libraries of the UdG. For the use of the computer facilities it is necessary that you make a reservation by identifying yourself with your student card.

In addition, the buildings of the different campus have study areas where you can work with your laptop.

All students and teachers have free access to the Internet and electronic mail. The Academic Secretary of the Polytechnic School of the UdG will provide you a student username, password, email address, etc.


## Transport


Over the years, Girona has become a genuinely modern transport hub, and access to the city (by car, train or plane) is excellent. You can find information regarding transport in the previous section "[TRAVELLING IN GIRONA](#)".


## Sports


Doing sport, participating in physical activity and sharing as a group is a big part of the university experience. The University of Girona Sports Service provides facilities,


access to other centres, discounts and health advice, and puts on competitions, so that you can enjoy a healthy lifestyle on campus.



**Sports Service**


**Zona esportiva**  
 Av. de Montilivi, 143, Campus Montilivi  
 17003 Girona


 +34 972 418 060


[esports@udg.edu](mailto:esports@udg.edu)


<https://www.udg.edu/en/viu/esports>





## Canteen

You can find four canteens at the Campus Montilivi located at: P1 building, central modules, Faculty of Sciences and Faculty of Economy. You can find the location of these buildings at the map of the Montilivi Campus: <https://www.udg.edu/en/coneix/La-UdG/Campus-universitari/Montilivi>.

The canteens offer menus at reduced university prices.


The opening times of the canteens of the Polytechnic School of the University of Girona and other services detailed at:



**UdG Services**



<https://www.udg.edu/en/eps/lescola/serveis>


## Students Union


The Student Council is the body of decision-making, representation and consultation of the student collective at the University of Girona, through which students take part in organising and enhancing the academic experience. It is made up of students chosen from University Senate members.

 *Student Council*

 *Mòduls centrals*  
*C/ Maria Aurèlia Capmany, 40, Campus Montilivi*  
*17003 Girona*

 [\*consell.estudiants@udg.edu\*](mailto:consell.estudiants@udg.edu)


 *+34 972 418 116*

 [\*https://www.udg.edu/en/consellestudians\*](https://www.udg.edu/en/consellestudians)

The students of the UdG group themselves from ideological or cultural confluences, in associations that have the objective of establishing ties with the the rest of the society and of fostering the extra-academic, highly diverse and life-giving activity.

 *Board of associations*

 *Mòduls centrals*  
*Mòdul 20 07. Espai Àgora, Campus Montilivi*  
*17003 Girona*

 [\*consell.associacions@udg.edu\*](mailto:consell.associacions@udg.edu)

 [\*https://www.udg.edu/en/viu/participacio/associacions\*](https://www.udg.edu/en/viu/participacio/associacions)

The Debating League involves universities that belong to the Vives network of Catalan-speaking universities. It is an intellectual competition between teams from each university on a current affairs topic, with a view to enhancing cultural and social debate and students' public speaking skills.

 *University debate league*

 *Edifici Àligues*  
*Pl. Sant Domènec, 3. Campus Barri Vell*  
*17004 Girona*

 *+34 972 418 000*

 *+34 648 838 651 (WhatsApp)*

 [\*esports@udg.edu\*](mailto:esports@udg.edu)

 [\*https://www.udg.edu/en/viu/participacio/lliqa-de-debat-universitari\*](https://www.udg.edu/en/viu/participacio/lliqa-de-debat-universitari)



## Life at the UdG


You can find additional information regarding the campus and university life at:


 *Life at the UdG*

 <https://www.udg.edu/en/viu/>

## ENTRY AND RESIDENCE REGULATIONS

You can find residence card and visa information for EU and Non EU students at the following link:

 *Residence card and visa*

 <https://www.udg.edu/ca/internacional/would-you-like-to-come-to-the-udg/useful-information-for-master-students/residence-card-and-visa>

## COMMUNICATION

### Post office

There are several post offices in Girona. The nearest post office to the Campus Montilivi is located at:

 *Post office*

 *Avinguda de Lluís Pericot, 23  
17004 Girona*

 *+34 972 483 376*

 *Monday to Friday: 08h30 – 20h30*

### Phone Calls

If you are a fresh arrival in Spain, then getting a local mobile phone number is an important step in setting up your new life in the sunny country. After all, this will help you stay in touch with your loved ones back home, as well as new friends and colleagues, and much more. Like other European countries, the Spanish use the GSM network for mobile communications. This makes it easy for most people to connect

on arrival. However, even if you are coming from somewhere that uses the CDMA network, your smartphone will still likely work in Spain.

Spain has a well-developed 4G network, with much of the country having access to 4G and 4G+ connectivity. Furthermore, 5G is increasingly available throughout the country, particularly in more built-up areas around major cities and resorts. That said, Spain is a surprisingly mountainous country, and, therefore, connectivity can vary significantly throughout the regions. So be sure to check your options ahead of time to avoid being left without a signal.

There are four main providers of mobile phones: Vodafone, Orange, Yoigo or Movistar among others.

For more complete information, check out this website:



*How to get a SIM card and mobile phone number in Spain*



<https://www.expatica.com/es/living/household/spain-sim-card-1019515/>

# TASTY EXPERIENCE





# FOOD

## *Eating Habits*

Catalonia is a gastronomic paradise, where Catalan cuisine is a mouthwatering blend of heritage, produce, terroir, tradition, creativity, innovation... All of these things, together with an endless love of fine-dining culture, make discovering it with your palate a truly appealing option.

Catalonia's gastronomic heritage can be traced back to medieval times and is still based on the value of produce and terroir stemming from locally sourced, seasonal ingredients that reflect the vast wealth of the Catalan landscape: the sea, the mountains, vegetable gardens, orchards and woodland... This tradition has given rise to such popular recipes as escudella i carn d'olla, a type of pot au feu, and a chargrilled vegetable salad known as escalivada, to name just two of the typical dishes that bring the wealth of our produce to your plate. Produce brought in daily to all the city's food markets and a key ingredient of the Mediterranean Diet, which was awarded Intangible Cultural Heritage status by UNESCO in 2010. And, in addition to the exquisite and varied traditional historic recipes, we have to add the creative signature cuisine that has put many of our restaurants at the forefront of cuisine around the world. After receiving such accolades, it comes as no surprise that Catalonia was named European Region of Gastronomy in 2016.

Some Catalan traditional dishes, sweets and pastry:

- Amanida catalana
- Arròs de guatlla i butifarra
- Arròs negre de l'Empordà
- Coca d'escalivada
- Crema catalana
- Escalivada
- Escudella i carn d'olla
- Faves a la catalana
- Fricandó amb moixernons
- Mandonguilles amb sèpia
- Pa amb tomàquet
- Pa de Sant Jordi
- Panellets de pinyons
- Pollastre amb escamarlans
- Salsa allioli
- Tortell de Reis

## *Meals*

The daily rhythm in Spain is quite unique and it relies on the mealtimes in Spain. Spanish people are known for being laid-back but they keep their meals on a tight schedule. If you want to get used to Spanish life, eating at the right times is the first step. Missing the mealtimes in Spain means you'll be stuck eating overpriced tourist food because all the other restaurants are closed.

#### **7h00-9h00 | Desayuno:**

Desayuno means breakfast in Spanish. Breakfast in Spain is a short and often sweet snack that may be grabbed on the way out the door (or not at all). Many Spaniards skip the meal and save their hunger for the next meal, the almuerzo. It is typical to stop at a cafe for something starchy, like a croissant, toasted baguette or churros. Wash down your breakfast with cafe con leche or fresh orange juice (commonly from the Valencia orange).

#### **10h30-12h00 | Almuerzo:**

Almuerzo has a special meaning in Spain: the mid-morning snack. In other Spanish-speaking countries, it means lunch. However, almuerzo in Spain is taken to tide people over until their late lunch. This snacktime in Spain usually consists of a sandwich or bocadillo, especially one filled with a slice of tortilla de patatas.

#### **14h00-16h00 | Comida:**

La Comida or lunch in English is the most important of all the mealtimes in Spain. Many restaurants and cafeterias do not open until two in the afternoon but you might find a few open from 13:30. Lunch in Spain is often made up of a few courses such as an appetizer, main course and dessert all for one price under the menu del dia. Remember that it's perfectly acceptable to take a siesta after the biggest meal of the day.

#### **17h30-19h00 | Merienda:**

La Merienda is another Spanish meal that is designed to tide you over until the next meal. This is the late-afternoon snack that gives Spaniards a chance to take a break, take a bite and get some energy. Sweets and pastries are most commonly eaten during the merienda but small sandwiches with cured meats are also available.

#### **20h30-22h30 | Cena:**

La Cena means dinnertime in Spain. Contrary to dinner in other countries, Spanish dinner is light. As is the custom when eating tapas, a few plates are ordered and shared amongst friends or family. This is another one of the mealtimes in Spain that can start and last quite late.

# FINANCES

## Currency

In the year 1986, Spain joined the Monetary Union and the Euro (€). To get an idea of the exchange rate, we would like to inform you that one USD corresponds approximately to 1.00 €.

**Coins :** 0.01 €; 0.02 €; 0.05 €; 0.10 €; 0.20 €; 0.50 €; 1.00 €; 2.00 €

**Bank-notes :** 5 €; 10 €; 20 €; 50 €; 100 €; 200 €; 500€

## Exchanging Money

The best place to exchange money is in the main banks (usually 08:30–14:00 Monday to Friday). The banks at the airport offer a reasonable rate, so change your money there.

## Banks

Banks in Spain have one of the highest ratios of bank branches per capita in Europe and offer clients very modern and efficient services like mobile or internet banking, SMS alerts etc.

Spanish bank account requirements are more or less the same as for any other country. Once you choose the bank you want to use when moving to Barcelona, the next step will be to decide what type of account suits your needs.

Banks will offer their service to residents, as well as NON-residents. However, if you are a resident you will enjoy a larger choice of products and services, as well as better interest rates.

In the Campus Montilivi, you can find the “Banc Santander” bank office, where UdG students may benefit from special conditions. This bank office is located at:



*Bank Santander*



*Campus Montilivi – Pabellón M-20*



*+34 972 219 150*

## Credit Cards


American Express, MasterCard, Maestro and VISA are accepted in Spain, and are usually welcome in small hotels, restaurant and shops.



## HEALTH AND WELFARE

### Hospital

 *Hospital Universitari de Girona Doctor Josep Trueta*

 *Avinguda de França s/n*


 <http://www.icsgirona.cat/ca/hospitaltrueta>

### Pharmacy

Pharmacies are open from Monday to Friday (morning and afternoon) and Saturdays (morning). The opening times depend on each pharmacy. There is usually a notice on the pharmacy window or door with details of the nearest 24-hour pharmacy ("farmàcia de guàrdia").


## ACCOMMODATION


You will live and study in a university city. Girona is culture and progress, it is active and dynamic. It is one of the ten best cities in Europe for a holiday break (according to *The Guardian*, 2016). You can find accommodation options at:

 *UdG accommodation*

 <https://www.udg.edu/en/viu/Serveis-Universitaris/Allotjament>

In addition, there are some staff of the University of Girona renting flats or rooms. You can find these offers at the following link:

 *Flats/rooms from UdG Staff*

 <https://aserv2.udg.edu/apps/ore/Ofertes-dallotjament-per-a-estudiants-internacionals>

# CULTURE

University is culture. There are many activities for the university community to develop their artistic skills. The theatre workshop, choir and xoriguers human tower building group are examples of how the University of Girona develops its cultural fabric with a sense of excellence and commitment. More information about culture options in Girona and the UdG:



## *Other interesting places in Barcelona:*

### **MUSEU NACIONAL D'ART DE CATALUNYA**

The museum MNAC is housed in the Palau Nacional, a landmark building dating from the 1929 International Exhibition of Barcelona. It is located on Montjuïc Hill, a privileged setting which boasts unique, magnificent views of Barcelona.

### **FUNDACIÓ FRAN DAUREL**

The galleries of the Fundació Fran Daurel opened in 2001 in the Poble Espanyol, or Spanish Village, on Montjuïc Hill.

### **CAIXAFORUM**

CaixaForum, the Museum and Cultural Centre of "La Caixa" Community Projects, is housed in one of Barcelona's landmark buildings, the Casaramona textile mill, a jewel of industrial modernista architecture designed by Josep Puig i Cadafalch.

### **CASA-MUSEU GAUDÍ**

The Casa-Museu Gaudí was built in 1904 as a show house in the Park Güell which was originally designed as a garden-city in Barcelona. Gaudí made it his home, and it still contains some of his personal objects and mementoes.

### **FUNDACIÓ JOAN MIRÓ**

The Fundació Joan Miró is located in Montjuïc Park in a magnificent Mediterranean-style building designed by Josep Lluís Sert, and houses the most important public collection of works by Joan Miró.

### **BASÍLICA DE LA SAGRADA FAMÍLIA**

Located in the centre of Barcelona, the Basílica de la Sagrada Família has become one of the most iconic landmarks of Barcelona, despite remaining unfinished at the time of Gaudí's death.

### **MUSEU PICASSO**

The Museu Picasso is housed in five Catalan-Gothic-style palazzos dating from the 13th and 14<sup>th</sup> centuries, and opened to the public in 1963. It is now an essential museum for anyone wanting to find out about the artist's formative years.

### **PARK GÜELL**

Park Güell is the famous park with mosaic benches and the salamander. This Park Güell is a sightseeing must-see when visiting Barcelona. However, only a limited number of visitors are admitted every hour. The park used to be free, but now you have to purchase your tickets in advance.

### **CASA MILA AND CASA BATTLÓ**

Casa Mila and Casa Batlló are two buildings with flats designed by Gaudí. La Pedrera means 'stone quarry' and is a highlight in terms of architecture. Visit one of these 'casas' of Antoni Gaudí to understand what the Catalan Modernism is.

### **LAS RAMBLAS**

Las Ramblas is the busiest street in Barcelona with its flower stalls, plane trees, street musicians, and living statues. It's the most touristy place in the city and the spot to get souvenirs.



# UNFORGETTABLE CITIES

Funded by  
the European Union



GIRONA | FOTO BY MATHIAS REDING

## GENERAL INFORMATION


### Cost of Living (in €)

The cost of living in the city of Girona for a student can vary quite a bit depending on what that student is willing to spend, especially insofar as leisure and free time expenses are concerned. In fact, it is important to take into account that although Girona is a very comfortable city, comfort has its price, sometimes quite high.

According to a monthly estimate including only lodging and food, a student will need around €700 minimum to live in Girona.


Expenses	Price in Euros
Accommodation	300
Meals	300
Leisure	70
Univerity (books, etc)	30
Total	700


More details at:

 UdG: Practiva information

 <https://www.udg.edu/ca/internacional/would-you-like-to-come-to-the-udg/all-steps-at-a-glance/practical-information-for-your-stay>

### Usefull Phone Numbers

 UdG: Practiva information

 <https://www.udg.edu/ca/internacional/would-you-like-to-come-to-the-udg/all-steps-at-a-glance/practical-information-for-your-stay>

You can find useful phone numbers at the following link:

<https://www.udg.edu/ca/internacional/Would-you-like-to-come-to-the-UdG/All-steps-at-a-glance/Useful-contacts>

### Usefull Phone numbers

National emergency number	112
Health: CatSalut	061
Municipal	+34 972 419 000
Tourist information	+34 972 010 001
Public information	+34 972 419 010
Gender Equality Area	+34 972 419 647



## Usefull phrases

English	Catalan	Spanish
<i>Hello</i>	<i>Hola</i>	<i>Hola</i>
<i>Good morning</i>	<i>Bon dia</i>	<i>Buenos días</i>
<i>Good afternoon</i>	<i>Bona tarda</i>	<i>Buenas tardes</i>
<i>Good evening/ Good night</i>	<i>Bona tarda/ Bona nit</i>	<i>Buenas tardes/ Buenas noches</i>
<i>See you later</i>	<i>Fins després</i>	<i>Hasta luego</i>
<i>Good bye</i>	<i>Adéu</i>	<i>Adiós</i>
<i>Excuse me</i>	<i>Disculpi</i>	<i>Disculpe</i>
<i>How are you?</i>	<i>Com estàs?</i>	<i>¿Cómo estás?</i>
<i>I'm fine, thanks</i>	<i>Estic bé, gràcies</i>	<i>Estoy bien, gracias</i>
<i>My name is...</i>	<i>El meu nom és...</i>	<i>Mi nombre es...</i>
<i>What's your name?</i>	<i>Com et dius?</i>	<i>¿Cómo te llamas?</i>
<i>Glad to meet you</i>	<i>Encantat de conèixer-te</i>	<i>Encantado de conocerte</i>
<i>Hello? Who is speaking?</i>	<i>Hola? Amb qui parlo?</i>	<i>Hola? ¿Quién habla?</i>
<i>This is ... (name) speaking</i>	<i>Parla... / Sóc... (name)</i>	<i>Habla... / Soy... (name)</i>
<i>Can you speak slower, please?</i>	<i>Pot parlar més a poc a poc, si us plau?</i>	<i>¿Puede hablar más despacio, por favor?</i>
<i>I don't understand</i>	<i>No entenc</i>	<i>No entiendo</i>
<i>I'm lost</i>	<i>M'he perdut</i>	<i>Me he perdido</i>
<i>Where is UdG?</i>	<i>On és la UdG?</i>	<i>¿Dónde está la UdG?</i>
<i>Where is it?</i>	<i>On és?</i>	<i>¿Dónde está?</i>
<i>How much is it?</i>	<i>Quant costa?</i>	<i>¿Cuánto cuesta?</i>
<i>I would like to buy</i>	<i>M'agradaria comprar</i>	<i>Me gustaría comprar</i>
<i>May I have the bill, please?</i>	<i>Em pot donar la factura, si us plau?</i>	<i>¿Puede darme la factura, por favor?</i>
<i>Do you accept credit card?</i>	<i>Accepten targeta de crèdit?</i>	<i>¿Aceptan tarjeta de crédito?</i>
<i>I would like a coffee</i>	<i>M'agradaria prendre un cafè</i>	<i>Me gustaría tomar un café</i>
<i>Where is the Bathroom?</i>	<i>On és el bany?</i>	<i>¿Dónde está el baño?</i>
<i>What time is it?</i>	<i>Quina hora és?</i>	<i>¿Qué hora es?</i>
<i>Help! Police!</i>	<i>Ajuda! Policia!</i>	<i>¡Ayuda! ¡Policía!</i>

## Vocabulary

English	Catalan	Spanish
<i>Yes</i>	<i>Sí</i>	<i>Sí</i>
<i>No</i>	<i>No</i>	<i>No</i>
<i>Open</i>	<i>Obert</i>	<i>Abierto</i>
<i>Closed</i>	<i>Tancat</i>	<i>Cerrado</i>
<i>Push</i>	<i>Empènyer</i>	<i>Empujar</i>
<i>Pull</i>	<i>Estirar</i>	<i>Tirar</i>
<i>University of Girona</i>	<i>Universitat de Girona</i>	<i>Universidad de Girona</i>
<i>Student's Residence</i>	<i>Residència d'estudiants</i>	<i>Residencia de estudiantes</i>
<i>Train</i>	<i>Tren</i>	<i>Tren</i>
<i>Railway Station</i>	<i>Estació de tren</i>	<i>Estación de ferrocarril</i>
<i>Ticket</i>	<i>Bitllet</i>	<i>Billete</i>
<i>Timetable</i>	<i>Horari</i>	<i>Horario</i>
<i>Bus</i>	<i>Autobús</i>	<i>Autobús</i>
<i>Bus stop</i>	<i>Parada d'autobús</i>	<i>Parada de autobús</i>
<i>City Centre</i>	<i>Centre de la ciutat</i>	<i>Centro de la ciudad</i>
<i>Post Office</i>	<i>Oficina de correus</i>	<i>Oficina de correos</i>
<i>Pharmacy</i>	<i>Farmàcia</i>	<i>Farmacia</i>
<i>Hospital</i>	<i>Hospital</i>	<i>Hospital</i>
<i>Supermarket</i>	<i>Supermercat</i>	<i>Supermercado</i>



<i>Cinema</i>	<i>Cinema</i>	<i>Cine</i>
<i>Theatre</i>	<i>Teatre</i>	<i>Teatro</i>
<i>Restaurant</i>	<i>Restaurant</i>	<i>Restaurante</i>
<i>Butchary</i>	<i>Carnisseria</i>	<i>Carnicería</i>
<i>Canteen</i>	<i>Menjador universitari</i>	<i>Cantina</i>
<i>Library</i>	<i>Biblioteca</i>	<i>Biblioteca</i>
<i>Book</i>	<i>Llibre</i>	<i>Libro</i>
<i>Money</i>	<i>Diners</i>	<i>Dinero</i>
<i>Stamp</i>	<i>Segell</i>	<i>Sello</i>
<i>Food</i>	<i>Menjar</i>	<i>Comida</i>
<i>Bread</i>	<i>Pa</i>	<i>Pan</i>
<i>Milk</i>	<i>Llet</i>	<i>Leche</i>
<i>Water</i>	<i>Aigua</i>	<i>Agua</i>

### Days of the week

English	Catalan	Spanish
<i>Monday</i>	<i>Dilluns</i>	<i>Lunes</i>
<i>Tuesday</i>	<i>Dimarts</i>	<i>Martes</i>
<i>Wednesday</i>	<i>Dimecres</i>	<i>Miércoles</i>
<i>Thursday</i>	<i>Dijous</i>	<i>Jueves</i>
<i>Friday</i>	<i>Divendres</i>	<i>Viernes</i>
<i>Saturday</i>	<i>Dissabte</i>	<i>Sábado</i>
<i>Sunday</i>	<i>Diumenge</i>	<i>Domingo</i>

### Months of the Year

English	Catalan	Spanish
<i>January</i>	<i>Gener</i>	<i>Enero</i>
<i>February</i>	<i>Febrer</i>	<i>Febrero</i>
<i>March</i>	<i>Març</i>	<i>Marzo</i>
<i>April</i>	<i>Abril</i>	<i>Abril</i>
<i>May</i>	<i>Maig</i>	<i>Mayo</i>
<i>June</i>	<i>Juny</i>	<i>Junio</i>
<i>July</i>	<i>Juliol</i>	<i>Julio</i>
<i>August</i>	<i>agost</i>	<i>Agosto</i>
<i>September</i>	<i>Setembre</i>	<i>Septiembre</i>
<i>October</i>	<i>Octubre</i>	<i>Octubre</i>
<i>November</i>	<i>Novembre</i>	<i>Noviembre</i>
<i>December</i>	<i>Desembre</i>	<i>Diciembre</i>

## Numbers

English	Catalan	Spanish
One	Un	Un
Two	Dos	Dos
Three	Tres	Tres
Four	Quatre	Cuatro
Five	Cinc	Cinco
Six	Sis	Seis
Seven	Set	Siete
Eight	Vuit	Ocho
Nine	Nou	Nueve
Ten	Deu	Diez
Eleven	Onze	Once
Twelve	Dotze	Doce
Thirteen	Tretze	Trece
Fourteen	Catorze	Catorce
Fifteen	Quinze	Quince
Sixteen	Setze	Dieciséis
Seventeen	Disset	Diecisiete
Eighteen	Divuit	Dieciocho
Nineteen	Dinou	Diecinueve
Twenty	Vint	Veinte
Thirty	Trenta	Treinta
Fourty	Quaranta	Cuarenta
Fifty	Cinquanta	Cincuenta
Sixty	Seixanta	Sesenta
Seventy	Setanta	Setenta
Eighty	Vuitanta	Ochenta
Ninety	Noranta	Noventa
One hundred	Cent	Cien
One thousand	Mil	Mil

## Master's Name

English	Catalan	Spanish
European Master Course in Advanced Structural Analysis and Design using Composite Materials	Màster Europeu en Anàlisi i Disseny Estructural Avançat amb Materials Compostos	Máster Europeo en Análisis y Diseño Estructural Avanzado con Materiales Compuestos





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