The student, at the centre of the UPC teaching model

Much more than studying

Excellent research

Innovation and knowledge transfer to companies

2021-2022
This is a photo file that illustrates the UPC in all its magnitude for the 2021-2022 academic year. This academic year has started with all the face-to-face activities possible to recover the pulse of university life and the personal, human interactions (with all the required health measures) that we have missed so much during the long months of the pandemic.

In its 50 years of existence, the UPC, our university, has become a key element of Catalonia, a leading institution that has forged a natural association between Catalan technology and the UPC brand. The University inherited the tradition of industrial teaching in Catalonia and has been able to guarantee its current position as a technology leader and its future as an indispensable element to tackle the major exciting challenges of our society. Through its graduates, the UPC has shaped Catalonia. This is the dimension and therefore the responsibility of our task: the knowledge the UPC teaches outlines the Catalonia of the future.

This explains the relevance of our social commitment.

The UPC of the future is based on three main pillars. The first is our commitment to the training of competent professionals who can promote the economic progress of Catalonia. The second is excellence in research and technology transfer. We are leaders in these areas and this is one of our most important features. The third is how well established we are in the territory. We are the Catalan university that is spread over the largest area. We are present in nine campuses in seven cities (Barcelona, Castelldefels, Manresa, Sant Adrià de Besòs, Sant Cugat del Vallés, Terrassa and Vilanova i la Geltrú). And we are proud to be close to the companies and small and large cities that make up Catalonia. No less important is our capacity to adapt to change, the capacity to understand and coexist in a constantly shifting environment, where it is not just the responses that have to be modified, often it is the questions themselves. Change can generate insecurity, but it is a symptom of vitality and the UPC is ready to live with it.

This is the UPC formula. A rich, complex, recurring interaction of strengths to provide the best service to our society. A formula that must allow us to continue to be one of the main agents shaping Catalonia in the next 50 years.

Daniel Crespo Artiaga
Rector
Public and well positioned in the main international university rankings, the UPC has a strong link with the production sector and the territory. Quality graduate employment is one of the features that sets it apart.

The UPC in figures

28,669 BACHELORS AND MASTER'S DEGREE STUDENTS
3,459 TEACHING AND RESEARCH STAFF
2,061 ADMINISTRATIVE AND SERVICE STAFF
2,038 DOCTORAL CANDIDATES
66 BACHELOR'S DEGREES
18 SCHOOLS
69,442 UPC ALUMNI
2,929 LIFELONG LEARNING STUDENTS
81 MASTER'S DEGREES
30 DEPARTMENTS
351 DOCTORAL DEGREE HOLDERS
45 DOCTORAL PROGRAMMES
5,924 BACHELOR'S AND MASTER'S DEGREE GRADUATES

QUALITY GRADUATE EMPLOYMENT

A year after graduating, 93% of UPC graduates are in employment, 86% have taken less than six months to find a job. Most of them started their careers thanks to work placements, 96% of which were on a paid basis.

(Source: AQU Catalunya)
The UPC is a university that puts the student at the centre of their own learning process. In this process, the University proposes solid theoretical training, as well as experiences and projects that take approaches such as hands-on learning, learning by doing and project-based learning. Experiences with the UPC stamp.

The student, at the centre of the UPC teaching model

The recipe works: 93% of UPC graduates are in work a year later and the degree of employer satisfaction is particularly high. “At the UPC, students gain the capacity to resolve any problem” is a comment often made by companies in their assessments of the training received by graduates.

The aim is for students to gain the capacity to advance with knowledge independently, to develop creative thinking and to tackle the solution of interdisciplinary problems. In the UPC model, curricula are focused on the competencies and abilities that students must gain.

For this reason, the effort that students make is assessed within and outside of class hours.
HIGH ACADEMIC PERFORMANCE: TAKING TWO DEGREES AT THE SAME TIME

Oriol Vinyals is the research director of Google DeepMind, one of the most important laboratories in the world in the development of artificial intelligence. Vinyals is also a former student of the UPC. He graduated in 2007 from the Interdisciplinary Higher Education Centre (CFIS). This centre enables students to take two UPC degrees at the same time. Vinyals studied Telecommunications Engineering and Mathematics. Years later, Vinyals recalls with appreciation the time he spent at the University, which clearly marked his future: “The CFIS is one of the only centres in the country that tells students who want more and seek the most difficult academic challenges that they are not alone... There I saw very clearly that academic excellence was what would define me professionally.”

Every year, around 6,000 people graduate who go on to occupy relevant positions in the job market. Beyond the objective of employment, graduates receive high-quality training and form ties on campus that endure over time. UPC Alumni and the clubs and international chapters bring together graduates from around the world, in a large network of almost 70,000 people.

PLACEMENTS TO EXPLORE THE JOB MARKET AND EXPAND COMPETENCIES

Work placements are a great option to experience the job market and complement the knowledge gained in academic training provided by the UPC. Students gain new competencies that prepare them for professional activities. At the UPC, placements are almost always paid, they increase graduate employability and promote innovative capacity. They are a defining element of the UPC and contribute to making the institution the best university in Spain in terms of quality graduate employment.

In the 2020-2021 academic year, 3,823 students participated in placement programmes.

TO BE UPC, TO BE UNITE!

The internationalisation of the curriculum is another strength of UPC training, as the University provides numerous opportunities through specific calls for applications and through 1,600 mobility agreements with over 700 higher education institutions worldwide. Studying at the UPC implies being a Unite! student from the outset. This partnership includes some of the most prestigious universities in Europe, most of which have a strong technological, architectural and engineering focus. Unite! has paved the way to advance beyond traditional university mobility. A UPC student can take a summer course at Aalto University, KTH or the Technical University of Darmstadt.

In the near future, the partnership, which also includes Grenoble INP, the Polytechnic of Turin and the University of Lisbon, will offer master’s degrees and doctoral programmes taught by one or several of these universities. Unite! has introduced a broader international perspective that is also closer to the member universities. It offers students a wide range of new training opportunities.

AND IF YOUR DREAM IS TO START A COMPANY...

...Empreñ UPC facilities are the ideal setting for students to develop their innovative projects and new business ideas. They are located on most of the campuses and function as a pre-incubation programme for technology-based projects. In the Empreñ facilities, students have work areas, share resources and services, receive training and advice on starting a company and can be mentored by specialists.

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Academic life at the UPC develops in an environment of knowledge that is full of opportunities. Over a hundred student associations ensure that students can find a project they identify with and enjoy university life in another way. The comprehensive training of students is the ultimate aim.

At the UPC, students can join a Catalan human towers group to try to touch the sky with their hands as part of a coordinated team. In addition to this Catalan tradition, which is strongly rooted among young people, there are many other options such as university theatre, Japanese culture and cinema. In total, around 150 student associations are active on UPC campuses. Particularly notable are initiatives that, more than hobbies, are a personal or group response to the desire to make the world a better place. Examples would be associations that participate in university governance or the actions of student delegations that actively safeguard and defend students’ interests and the quality of training.

In recent years, the climate emergency has become one of the priorities of university associations. In 2019, a group of students declared a state of climate emergency at the UPC along the lines of Fridays for Future. A few weeks later, the UPC University Senate ratified a proposal to make climate action a priority. Students wanted to increase pressure on governments to raise awareness of the environmental crisis, intensify the use of renewable energies, improve the use of resources and promote recycling and reuse campaigns.

A carbon neutral university by 2030

The UPC has a climate action strategy to achieve neutrality in greenhouse gas emissions by 2030. To move in this direction, the University has started to work towards its own production of energy. A recent example is the new photovoltaic solar plant on the North Diagonal Campus in Barcelona, of 170 kW with 510 modules. With a surface area of 2,067 m² on the rooftops of classroom buildings, it is expected to produce around 225,000 kWh. This is equivalent to 50% of the energy consumption of these buildings, which house around 6,000 people.
Sustainability and social commitment, competencies that will change the world

The UPC incorporates sustainability and social commitment as one of the cross-disciplinary competencies to be gained by bachelor’s degree students. The aim is for future professionals to be aware of and understand the complexity of economic and social phenomena and to be able to use, in a balanced and compatible way, techniques, technology, economics and sustainability.

For example, consideration of the entire life cycle is essential to properly assess the environmental impact or the sustainability of a process or product created on a master’s degree taught at the Barcelona School of Civil Engineering. At the same time, the University promotes numerous initiatives that influence this competency through its schools. One of these actions is the Recircula Challenge, a competition promoted by the UPC-AMB Recircula Hub of the Barcelona East School of Engineering (EBEE) that challenges university student teams to propose solutions to real, pressing problems in the circular economy. Every academic year, a new challenge is proposed on the life cycle of a material and how it is managed as waste in the Barcelona metropolitan area.

Teams have to propose technology-based solutions that reduce the ecological footprint and have a positive social impact. In the 2021 edition, the challenge could be no other than finding solutions to reduce the impact of waste generated by the COVID-19 pandemic with the support of companies and mentors.

In the image above, a view of the solar plant on the North Diagonal Campus.

With perspective

The gender perspective is a cross-disciplinary competency on bachelor’s and master’s degrees. The UPC was one of the first universities to incorporate it into its academic programme. Teaching resources were created that enable gender-related needs and preferences to be integrated into architecture and into the design of solutions and technology, among other areas...

The UPC works actively to increase the number of women interested in STEAM (Science, Technology, Engineering, Arts and Maths) careers.

A large network to cooperate, raise awareness, train...

The Centre for Development Cooperation (CCD) is the UPC unit that promotes the University’s active involvement in development cooperation, volunteering and social participation.

Through this centre, the UPC supports the initiatives of community members who actively transfer knowledge and technology and who promote a collaborative network of people working in this area from different perspectives. They clearly show that they have attained the cross-disciplinary social commitment competency in university studies.

In the 2020-2021 academic year, the UPC community generated 45 development cooperation projects and 20 projects that were closely linked to exceptional cooperation on COVID-19.
Every year, the UPC launches around 700 research projects, many of which are at the cutting edge of science and in the context of significant partnerships with other institutions of excellence. Well positioned in the main international rankings, the UPC increasingly organises research through a large network of interrelations between research staff and national and international partners. The projects look for answers to the main challenges of society and many of them do so right at the frontiers of knowledge. One example is Big Data for Open Innovation Energy Marketplace (BD4OPEM), a European Horizon 2020 project that looks for innovative big data and artificial intelligence solutions to apply them to the energy sector and improve the management of electricity grids. Another example is Interact, which is creating interactive machine learning algorithms for natural language comprehension applications. When the European Commission concluded the H2020 programme, the UPC was already the Spanish university with the greatest capacity to attract funds from the programme and the leading Catalan university in terms of the number of projects.

The research that is the focus of many campus activities today is the progress of tomorrow. This paradigm has been made even clearer for the University and society by the COVID-19 pandemic. The UPC’s approach to research is highly varied and covers applications and basic research in many knowledge areas. The impact of this research makes the UPC one of the main European technology universities.
The UPC in the main international rankings

The UPC is very well positioned in most international rankings. This is particularly true in rankings that assess its areas of specialisation. The scores reveal a university that is particularly innovative and that is in the top rank of Spanish universities with the best performance (2021 edition, U-Ranking).

The energy transition, towards a new scenario

The UPC is leading various initiatives to make progress in the energy transition, which is a key factor in the fight against climate change. Research teams are participating in major transnational projects such as KIC InnoEnergy, which is designed to decarbonise Europe by developing research, training and knowledge transfer on energy efficiency, renewable energies, energy storage, nuclear instrumentation, smart grids, etc.

The aim is to collaborate with companies, governments and citizens to overcome the energy model that has dominated in the last 150 years, and to deepen knowledge of the use of new energy vectors. Research on hydrogen is one of the priorities in the development of these new vectors to reduce dependence on fossil fuels and greenhouse gas emissions. For over a decade, the UPC has been researching the production and use of hydrogen in different environments, including fuel cells.

Multifaceted research against the climate emergency

The fight against climate change and its consequences is one of the main research topics and a key area of knowledge transfer to companies and institutions. Many groups work actively to address what is surely humanity’s biggest challenge in the twenty-first century.

Solutions for the sea

The Maritime Engineering Laboratory, which is associated with the Barcelona School of Civil Engineering (ETSECCPB), has been working for some time on the regeneration of Mediterranean beaches with a focus on climate change and its most imminent consequences. The teams are trying to find solutions to the impact on the coast with solutions that range from renaturalisation of the coast to the use of geotextiles that function as a barrier to waves. Noise pollution of the sea and the impact on the species that live in it is another example in this area of research that, in this case, is carried out by the Laboratory of Applied Bioacoustics (LAB), associated with the Vilanova i la Geltrú School of Engineering (EPSEVG). Researchers have shown that Posidonia meadows exposed to human-generated noise have severe, permanent lesions in their sensory organs, a fact that has been scientifically proved to threaten their survival.
Keeping a close eye on COVID-19

The UPC’s Computational Biology and Complex Systems Group (BIOCOM-SC) has been working steadily, studying the data and making forecasts on the behaviour of the COVID-19 pandemic in Catalonia and Europe. A key task that, from the Baix Llobregat Campus, has highlighted the value of science and technology and the need to make knowledge available to society.

For years, scientists in the research group had been applying mathematics to better understand the behaviour of infectious diseases such as tuberculosis. With the advent of COVID-19, they shifted the focus to studying the evolution of this virus and its global reach. At the start of the pandemic, they took on the challenge of producing daily reports for the European Commission and the European Centre for Disease Prevention and Control (ECDC) and have to date completed over 200 of them. These reports are published periodically on their website (https://biocomsc.upc.edu/en/covid-19) and their Twitter account (@BIOCOMSC1). “All of a sudden, we went from conducting calm, leisurely, discreet and reflective research on tuberculosis to conducting frenetic research,” states Clara Prats, the coordinator of this research line.

Based on the number of COVID-19 infections and using a mathematical model that they developed with the Centre for Comparative Medicine and Bioimaging (CMCiB) of the Germans Trias i Pujol Research Institute (IGTP), they found the equation of a curve to forecast the evolution of the pandemic. At the beginning, their model was based on new diagnoses, but they have gradually adjusted and optimised it as data management has also improved. They have been working interminable days, exchanging information with scientists and health professionals around the world, and working through lockdown with meetings online. In a short time, they have managed to bring the public closer to statistics, diagrams, graphs and concepts such as the EPG index, the R number or the speed of infection and the cumulative incidence, while helping to disseminate what computer models are. Most importantly, their contributions have helped the country’s authorities to control the spread of coronavirus in Catalonia.

Small satellites with a big impact

Rising temperatures in the polar regions have a major environmental and economic impact around the world. Therefore, it is extremely important to register and monitor variations in snow and ice thickness. Students and young researchers at the UPC NanoSat Lab have generated with their own technology, the first maps of soil humidity, of the concentration, extension and thickness of sea ice, and of the salinity of the Arctic. For the first time, this has been achieved with two CubeSat six-unit nanosatellites, as part of the ‘FSSCat’ mission that on 3 September 2020 launched 50 small satellites into space in a European Space Agency (ESA) mission. These small satellites are the result of research at this UPC laboratory, which is associated with the Barcelona School of Telecommunications Engineering (ETSETB), and is dedicated to the design and manufacture of useful loads and small satellites. Its experience and results have made the laboratory a main player in Catalonia’s NewSpace strategy. Promoted by the Catalan government, NewSpace is based on the use of these CubeSats, which are small, have a lower cost and require less development time.

The aim is to develop a new market and a new Catalan technology sector that acts as a driver of other technologies, such as 3D printing, artificial intelligence, advanced electronics for sensors and computers, and latest generation mobile communications (Internet of Things and 5G), technologies in which UPC research is a benchmark.
A university with an international vocation. The academic activity of the UPC has no borders.
UNITE!
The Universidade de Lisboa, Portugal; the Grenoble INP in France; the Politecnico di Torino in Italy; the Technische Universität Darmstadt in Germany; the Royal Institute of Technology in Stockholm, Sweden; and Aalto University in Finland partner with the UPC in this project under the European Commission’s European Universities Initiative, an alliance to attract and export talent beyond the European continent. Unite! is a community of 170,000 students that generates research activity leading to over 20,000 publications a year.

UP4
The alliance of the four technical universities in Spain: the Universidad Politécnica de Madrid, the Universidad Politécnica de Cartagena, the Universitat Politècnica de València and the Universitat Politècnica de Catalunya.

SINO-SPANISH CAMPUS
A joint university campus with the Universidad Politécnica de Madrid, the Universidad de Sevilla and the Instituto Tecnológico de Estudios Superiores de Monterrey at Tongji University (China).

THE VALUE OF PARTNERSHIPS
Internationalisation is an integral part of the University’s activity that increasingly permeates its actions. The UPC is present in the most relevant international networks and has a great number of strategic alliances with international universities that contribute to borderless education and translate into all kinds of projects on the world stage.

Below are the main networks and alliances to which the UPC belongs:
The UPC is a university with strong business connections. A thousand annual agreements and projects transform the knowledge generated by the university community into productive value. Emerging sectors are a focus for an institution that is contributing to establishing the bases for Industry 4.0 through new industrial technologies. However, the University does not overlook solutions for small and medium-sized companies or participation in large international knowledge transfer projects.

Industry is experiencing a silent revolution that has led to total interconnection between machines and the operational integration of the people who work with them. This is Industry 4.0, a train that cannot be missed. The UPC, as a leading technology university in Catalonia, coordinates the project that will shape new Catalan industry, without ignoring how the productive fabric is transformed in other countries in the environment.

The project is called Looming Factory and serves to develop computer algorithms, communication systems and collaborative robots that should make Catalan industry a smart, connected environment that is also essentially human. The project must also promote the creation of a smart, connected pilot plant so that Catalan companies can experience authentic Industry 4.0 on site.

Looming Factory is part of the action on one of the emerging sectors in Catalonia, and the UPC has a high level of involvement as the coordinator of the project.

The University participates in a further five technology partnerships with public and private entities. The aim is also to foster new scenarios in the area of 3D printing, health technologies and quantum computing.

**INNOVATION HUBS**

The UPC injects technology into companies in a process that has evolved over time and now often involves carrying out joint developments rather than a collaboration. This is how innovation hubs are formed, an association with a broad scope between the UPC and a company, designed to foster an innovative environment over three years.

The company defines the areas in which work should be done and can develop an active open-innovation path that connects with student projects, gets closer to the innovation that develops in the University’s incubators and establishes synergies with spin-offs and start-ups. The latter is an ideal way to be immersed in the innovation of companies that are at various stages of maturity or already in the process of acceleration. Hubs are dynamic agents that can be shaped over time, their development is always based on the requirements and interests of the company and revolves around the needs of their strategy. In addition, they are always in line with the UPC’s mission and principles.

An example of this type of association that is fully consolidated is CARNET, a research and innovation hub on urban mobility that brings together the efforts of SEAT, Volkswagen Group Research and the UPC. Among other projects, the groups involved in CARNET are carrying out research and innovation to ensure that replacing human vision with artificial perception of the environment in automatic vehicles is not a problem in terms of detecting people, other cars or scooters crossing cities’ streets.

3D vision and deep learning are research lines associated with innovation hubs. In addition to the Volkswagen Group, the University has established this kind of relationship with companies such as Valenvers, Damm, Huawei, Siemens, Accel Grow, the Mutua d’Enginyers and the Port of Barcelona.
## Enterprise Chairs, A Long-Term Commitment

Enterprise chairs are an instrument to meet a business need associated with the consolidation of a project in the long term, with a considerable component of institutional commitment. The development of research, development and innovation projects and training are some of its aims. The chairs work towards specific purposes and have a director who promotes the company’s interests and those of the UPC.

**Abertis-UPC Chair** in Transport Infrastructure Management and Road Safety

**Girbau Group-UPC Chair** of Research and Innovation in Industrial Laundry Technology

**ICL-UPC Chair** in Sustainable Mining

**SEAT-UPC Chair** in Strategies for Innovation Excellence and Sustainable Mobility in the Automotive Industry

**HP-UPC Digital Manufacturing Innovation Hub Chair**

**UPC-Mercabarna Chair** for Tackling Food Waste

**“Ingeniería y Empresa” Chair** with the College of Industrial Engineers of Catalonia

**Batlleiroig Chair**

**AMES GROUP-UPC Chair** in Design and Innovation of New Biomaterials

**Infrastructure Circle-UPC Chair** (COPISA, FCC, Construcciones Rubau)

**Telefónica Cognitive IoT Chair** Universitat Politècnica de Catalunya, Pompeu Fabra University

**Endesa Red-UPC Chair** in Energy Innovation

**Grup JG Ingenieros - UPC Chair** for Sustainability Studies of Buildings

**Klockner-UPC Chair** in Dental Implants and Prostheses

**Mecalux UPC Chair** in Automatisms and Innovation for Logistics

**Jujol Chair**

**2,456** associated companies

**974** agreements with companies

**37** partially owned technology-based companies

**303** national patents in 10 years

**270** international patents in 10 years

**500** national licences in 10 years

**317** international licences in 10 years

## Industrial Doctorates, An Opportunity for Research, Development and Innovation

Industrial doctorates are a formula to increase the competitiveness and internationalisation of the Catalan industrial fabric through work carried out by doctoral students in a company. They are based on an agreement with the UPC and last for three years, during which the company increases its research, development and innovation activity and incorporates new knowledge into its innovation system. The defining trait of an industrial doctorate is the research project of the company at which the doctoral candidate carries out research training and that is the object of the doctoral thesis. Industrial doctoral degree holders act as bridges for knowledge transfer. Industrial doctorates are part of a programme supported by the Government of Catalonia in which the UPC is the leading university in terms of number of projects.

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**EIT Urban Mobility** is a European consortium in which the University participates that promotes innovation and entrepreneurship to achieve more efficient, smart and decarbonised cities, with a better quality of life for people and more inhabitable spaces.

5G Barcelona is a European 5G digital hub based on an open experimental infrastructure in the metropolitan area, which will serve as an urban laboratory for validating 5G technologies and services. In this project, the UPC partners with Mobile World Capital Barcelona, the Government of Catalonia and the Barcelona City Council.

1/ Intelligent Data Science and Artificial Intelligence (IDEAI), research, design and development of artificial intelligence techniques.
2/ Sustainable urban mobility, better quality of life for people.
3/ The Barcelona School of Agri-Food and Biosystems Engineering (EEABB) is a centre for teaching, research and innovation. In the image, cultivation studies in the laboratory.
UPC STRUCTURE

DEPARTMENTS
DAC. Computer Architecture
CEM. Materials Science and Engineering
CEN. Nautical Science and Engineering
CS. Computer Science
DEAB. Agri-Food Engineering and Biotechnology
DECA. Civil and Environmental Engineering
EPC. Project and Construction Engineering
ESSL. Service and Information System Engineering
ESE. Systems Engineering, Automatic Control and Industrial Informatics
EE. Electrical Engineering
EEL. Electronic Engineering
EGD. Engineering Graphics
EM. Mining, Industrial and ICT Engineering
EQ. Chemical Engineering

TECNIO RESEARCH CENTRES*
ENTEL. Network Engineering
EIO. Statistics and Operations Research
FIS. Physics
MMT. Heat Engines
MAT. Mathematics
MR. Fluid Mechanics
OO. Optics and Optometry
OE. Business Administration
PA. Architectural Design
RA. Architectural Representation
RMEE. Strength of Materials and Structural Engineering
TA. Architectural Technology
TGC. Signal Theory and Communications
THATC. Theory and History of Architecture and Communication Techniques
UT. Urbanism and Regional Planning

CATMech. Centre for Advanced Technologies in Mechanics
CD6. Centre for Sensors, Instruments and Systems Development
CITCEA-UPC. Centre for Technological Innovation in Static Converters and Drives
CREB. Biomedical Engineering Research Centre
DAMA-UPC - Data Management Group
GCM. Electromagnetic Compatibility Group
INTERTEX. Terrassa Institute of Textile Research and Industrial Cooperation
INTE. Institute of Robotics and Industrial Informatics
INTE. Institute of Energy Technologies
LABSON. Fluid Power Systems Laboratory
LACàN. Numerical Methods for Applied Sciences
MCIA. Motion Control and Industrial Applications Research Group
SARTI. Technological Development Centre for Remote Acquisition and Data Processing Systems
SRR-UPC. Smart Sustainable Resources

* Research centres that belong to the Network of Technological Innovation Support Centres (TECNIO)

SPECIFIC RESEARCH CENTRES
CATMech. CCABA. Advanced Broadband Communications Centre
CD6. Centre for Sensors, Instruments and Systems Development
CDPAC. Architectural Design Documentation Centre of Catalonia
CEBIM. Molecular Biotechnology Centre
CEBiP. Research and Development Centre for Business Improvement and Innovation
CETPD. Technical Research Centre for Dependency Care and Autonomous Living
CommSensLab-UPC. Remote Sensing, Antennas, Microwaves and Superconductivity Group
CPM. Centre for Land Valuation Policy (CEF)
CRAL. Centre for Research and Services for the Local Administration
CREE. Biomedical Engineering Research Centre
CREMIT. Center for Engines and Heat Installations
CReNE. Barcelona Research Center in Multiscale Science and Engineering
CS2. AC-UPC. Supervision, Safety and Automatic Control
IDEAI-UPC. Intelligent Data Science and Artificial Intelligence Research Center
LACAN. Numerical Methods for Applied Sciences and Engineering
LMG-UPC. Maritime Engineering Laboratory
MCJ2-UPC. Continuum and Computational Mechanics
PERC-UPC. Power Electronics Research Centre
SRR-UPC. Smart Sustainable Resources
TALP. Centre for Language and Speech Technologies and Applications

ASSOCIATED RESEARCH ENTITIES
BSC-CNS. Barcelona Supercomputing Center - Centro Nacional de Supercomputación (MareNostrum)
CIRIC. International Centre for Coastal Resources Research*
CIRRE. International Centre for Numerical Methods in Engineering*
CREDa. Centre for Agrifood Economics and Development
CBN. Mathematical Research Centre*
CTCT. Telecommunications Technology Centre of Catalonia*
EURECAT. Catalonia Technology Centre
FMA. Miquel Agustí Foundation
I2CAT. ic2at Foundation
IEB. Institute for Bioengineering of Catalonia*
ICFO. Institute of Photonic Sciences*
IEC. Institute of Space Studies of Catalonia*
ICRE. Catalonia Institute for Energy Research*

* Member of the Research Centres of Catalonia (CERCA) programme
2021-2022 BACHELOR’S DEGREES

www.upc.edu/en/bachelors

ARCHITECTURE, URBANISM AND BUILDING CONSTRUCTION
Architectural Technology and Building Science (ETSEBC)
Architecture Studies. ETSAV, ETSAV
Architecture Studies. ETSAV
Landscapes Architecture. EEAB-ETSAB

APPLIED SCIENCES
Data Science and Engineering. ETSETB-FIB-FME
Marine Sciences. EEEBE, EPSEM
Statistics. FME (interuniversity UB-UPC degree)
Economics and Statistics. FME

HEALTH SCIENCES AND TECHNOLOGY
Bimetallic Engineering. EEEBE
Optics and Optical Engineering. FIB

DESIGN AND MULTIMEDIA TECHNOLOGY
Design, Animation and Digital Art. CITM
Video Game Design and Development. CITM
Video Game Design and Development (taught in Spanish). CITM
Multimedia Studies. CITM

2021-2022 MASTER’S DEGREES

www.upc.edu/en/masters

ARCHITECTURE, URBANISM AND BUILDING CONSTRUCTION
Architecture Studies. ETSAV, ETSAV
Architecture Studies. ETSAV

APPLIED SCIENCES
Data Science and Engineering. ETSETB-FIB-FME
Marine Sciences. EEEBE, EPSEM
Statistics. FME (interuniversity UB-UPC degree)
Economics and Statistics. FME

HEALTH SCIENCES AND TECHNOLOGY
Bimetallic Engineering. EEEBE
Optics and Optical Engineering. FIB

DESIGN AND MULTIMEDIA TECHNOLOGY
Design, Animation and Digital Art. CITM
Video Game Design and Development. CITM
Video Game Design and Development (taught in Spanish). CITM
Multimedia Studies. CITM
THE UPC GROUP

The UPC Group consists of entities in which the Universitat Politècnica de Catalunya - BarcelonaTech has a direct or indirect controlling interest in their decision-making bodies, capital or endowment funds.

Fundació Politècnica de Catalunya

The Fundació Politècnica de Catalunya (FPC) is an institution created by the UPC to foster and promote lifelong learning activities. The UPC School coordinates this offering.

CIM UPC

The CIM UPC is an innovation and technology centre specialised in advanced production technologies. It helps companies and professionals to increase their technological and innovation capacity by offering technology services to the industrial sector and specific training programmes.

Mediterranean Technology Park (PMT)

A science and technology park promoted by the Government of Catalonia, the Baix Llobregat Provincial Council, Castelldefels City Council and the UPC. It promotes a multidisciplinary space in which research, innovation and knowledge transfer drive development.

Collaborating companies and organisations and sponsors

Sponsors of excellence

Abertis
Banca Santander
Fundación Cellex
Fundación MIP-UGR
GIRBAU Group
SEAT

Sponsors

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Telefónica
Zywu

Collaborators

AAO Óptico
ABIB
Área Metropolitana de Barcelona (AMB)
Association of Industrial Engineers of Catalonia (AEIC)
Between Technology
Caja de Ingenieros de Cataluña
College of Industrial Engineers of Mannesia
Consortios RUBAU
CORPISA Group
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dSPACE GmbH
Vocational Training School of Barcelona
FCC Construcción
Spanish Federation of Optical Sector Associations (FEDAO)

Fundación Caixa d’Enginyers
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Fundación ONCE
Gestión Natural Ópticos
Gira Ibérica
Catalan Institute of Oncology
Hilton
KUKA Robots Ibérica
Mutualitat de Previsió Social, Official College of Industrial Engineers of Catalonia
Optica del Penedés
Rovalm
Schneider Electric España
Sociedad Andalucía Cofetel
Sociedad General de Aguas de Barcelona
ZeCardio Therapeutics-ETSIB UPC
1/ Recreation of the rover, with chips made at the UPC, that explored Mars in the Mars 2020 mission. Image: NASA/JPL-Caltech.
2/ Semitransparent section of the inside of the Torre de Simó, VIMAC Laboratory of the ETSAB.
3/ Increasing female talent among UPC graduates is one of the institution’s objectives.
4/ Detail of the research carried out at the Barcelona East School of Engineering (EEBE).