



MASTER'S DEGREE IN SUSTAINABILITY

2013-2014 ACADEMIC YEAR

ACADEMIC INFORMATION

This master's degree no longer admitting students. It has been reformulated as master's degree in Sustainability Science and Technology.

The aim of this master's degree is to provide advanced training in the field of sustainable human development, enabling students to understand the complex relations between society, technology, economics and the natural environment and tackle the urgent social and environmental challenges inherent to sustainability: climate change, the depletion of natural resources, North-South inequalities, environmental justice, etc. This master's degree will train entrepreneurial professionals and agents of change who will, depending on their area of specialisation, be able to design and evaluate sustainable global solutions in a complex, uncertain environment, work in different cultural and professional spheres, use their interdisciplinary skills and apply scientific and technical rigour.

Starting	September
Duration	Two academic years
ECTS credits	120
Delivery	Face-to-face
Languages of instruction	Subjects will be taught in catalan, spanish or english, depending on the student's level of comprehension and on the didactic objectives of the master's degree course.
Organised by	Terrassa School of Engineering (EET) Vallès School of Architecture (ETSAV) Barcelona School of Civil Engineering (ETSECCPB) Barcelona School of Informatics (FIB) University Research Institute for Sustainability Science and Technology (ISUPC)
Prospective students	The main profile of the applicant corresponds to a person with a degree in engineering or architecture, or a Bachelor of Science, Geography, Natural Sciences or Environmental Science, which wants to develop an academic or professional activity oriented to sustainability.
Location	<ul style="list-style-type: none"> • North Campus (Barcelona) • Sant Cugat Campus • Terrassa Campus • Baix Llobregat Campus • Vilanova Campus
Website	https://is.upc.edu/docencia/master
E-mails	master.sostenibilitat@upc.edu

COMPETENCES

On finishing the master's degree, graduates will be able to:

Specific skills

- Have a global vision of the limits, problems, conflicts and challenges associated with the management of fresh water on the planet, energy production and consumption, the evaluation and resources and the sustainable management of energy and food, in addition to food security.
- Show knowledge of the basic principles of the sustainability paradigm, its debates and its environmental, sociocultural and economic implications..
- Show in-depth knowledge of the concept of human development and other alternative theories, such as development on a human

scale and the debates surrounding this theme.

- Interrelate the different economic systems and the models of development, presenting the theories of the environmental economy and the ecological economy as economic systems that encourage models of sustainable development.
- Understand and demonstrate knowledge of the dynamics and problems that have emerged within the globalisation phenomenon and their relationship with global sustainability.
- Show knowledge of international organisations and their decision-making mechanisms on a global level, analysing their theoretical bases and their proposals for the future that are coherent with the notion of sustainable development.
- Show knowledge of the impact that the use of technology has on the society that adopts it and the basic principles for sustainable technology.
- Show knowledge of the principles of ecology as a basic discipline for guiding relations between society and nature and progressing towards the sustainable management of natural resources.
- Analyse the material and energy flows that emerge within a system (industrial, architectural, urban) and their interrelationship with the territory and the resources sustaining that system.
- Analyse today's complex problems with a global and systemic vision.
- Deal with questions on an interdisciplinary basis.
- Design, plan, carry out and evaluate technological, scientific or management projects within a sustainability framework.
- Engage in dialogue, debate and negotiation and defend their own proposals with justified arguments.
- Analyse the key elements, the relations, the causes and the consequences of social phenomena.
- Acquire a broad-based vision of possibilities for economic organisation and by extension for other fields, fostering responsible innovation.
- Understand problems that exist on a global level: conflicts, migratory phenomena, social and regional inequality, etc.
- Adopt a critical but constructive attitude when facing the challenges of unsustainability.
- Understand the need for personal change in terms of values and attitudes in order to face the challenges of sustainability.
- Generate behaviour that incorporates sustainability in different areas of life.
- Encourage opening up to new forms of observing and analysing reality.
- Valuing cultural and social diversity.
- Understanding systems as the interrelation of material and energy flows with the environment.

In addition to these general specific skills, see the website of the Master's Degree to find out those skills that correspond to the five specialist areas: Industrial Ecology and Technological Innovation; Sustainable Education; Infrastructures, City and Region; International Cooperation for Development; Evaluation and Policies of Sustainability.

Cross-disciplinary skills

- Consider the global problem, beyond the specific situation and time, and develop a transversal vision and treatment of problems.
- Think critically based on the analysis, synthesis and evaluation of the different alternatives.
- Move within a world of increasing complexity and make decisions based on diverse criteria.
- Be sensitive to socio-environmental questions based on concern for the environmental impact of solutions and an understanding of the social dimension of problems.
- Look for information, select it, reflect on it, discern its content and create their own opinions based on this.
- Show knowledge of the field of study and of the profession.
- Communicate effectively verbally and in writing.
- Know languages, understanding English as the professional working language and means of communication.
- Manage information and the collection of data, and demonstrate knowledge of ICT.
- Learn to work in teams in an interdisciplinary environment with cooperative dimensions.
- Lead, negotiate, direct, motivate and supervise a group of people (with politicians, with other professionals, with people affected, etc.).
- Recognise diversity and multiculturalism.
- Organise themselves, establish priorities in their work and adapt to changes during the development of a project.
- Use self-teaching and other learning on a lifetime basis.
- Understand the points of view of others and adapt to new situations.
- Show social sensitivity and solidarity between and among generations.
- Be aware of professional ethical responsibilities.

PROFESSIONAL OPPORTUNITIES

The master's degree is based on five areas of expertise: industrial ecology, sustainable construction, infrastructures and sustainable territory, international cooperation for development, and evaluation and policies of sustainability, which allow students to move into the following professional profiles: process design, consultancy, municipal technician, expert in cooperation and expert in evaluation and formulation of sustainability policies, or to embark on research into sustainability.

