



INSTITUTE FOR
Sustainability Science
AND TECHNOLOGY

2015 – 2016 ANNUAL REPORT



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

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1. PRESENTATION

The Research Institute for Sustainability Science and Technology of UPC - BarcelonaTech promotes, coordinates and carries out academic and research activities in the fields of sustainability science and sustainable technologies at UPC.

The Institute's mission is to generate technical and conceptual tools to create a more sustainable production and development model and to collaborate in the UPC's endeavour to provide scientific and technical support for human, social, cultural and economic progress.

The ISST.UPC is active in higher education, research and innovation, technology transfer and promotion of sustainability culture.

Its main objectives are as follows:

- Opening up sustainability research to UPC groups and researchers, by coordinating and promoting multi and trans-disciplinary research projects.
- Organizing and promoting specific postgraduate courses and degrees (Master's degrees, PhD programmes and other specialized teaching activities) directly linked with the UPC research in the fields of sustainability science and sustainable technologies.
- Disseminating the results of the research carried out at the IS.UPC, both to the university community and to the society as a whole, and sparking discussion about it.
- Encouraging the commitment and interaction of the UPC within society, and encouraging UPC's support of civic demands for promoting progress towards more sustainable development models.

1.1. LETTER FROM THE DIRECTOR

The Institute for Sustainability Science and Technology (IIST.UPC) is a catalyst for excellent interdisciplinary and transdisciplinary research across Universitat Politècnica de Catalunya that is working for global sustainability.

Today, our institute assembles more than 200 professionals, including staff scientists, postdocs, PhD students, technicians, general research support staff and administrators, devoted to the well-functioning of ISST.UPC. Despite the difficult economic situation that our country is currently facing, the ISST.UPC has maintained its dynamisms, transforming, adjusting and improving to continue performing excellent science and attracting public and private competitive funding, both from national and international sources.

This Annual Report covers the activities of ISST.UPC from September 2015 to August 2016. During this period, main efforts have focused on consolidating an interdisciplinary academic space within the UPC community to face the challenges of sustainable human development through science progress and technology innovation. The integration of economic, environmental and social aspects of technology, architecture and engineering, as well as the reference points of closing of cycles and systemic thinking, are some of the distinctive characteristics of the Institute research focus. Academic excellence, strategic international and local networking, and a trans-disciplinary approach to knowledge creation and dissemination are other key characteristics the Institute.

The ISST.UPC has its own Master degree in Sustainability Science and Technology (2 years – 120 ECTS). Besides the PhD studies in Sustainability. (98 PhD students). With 11 PhD dissertations read in this academic year.

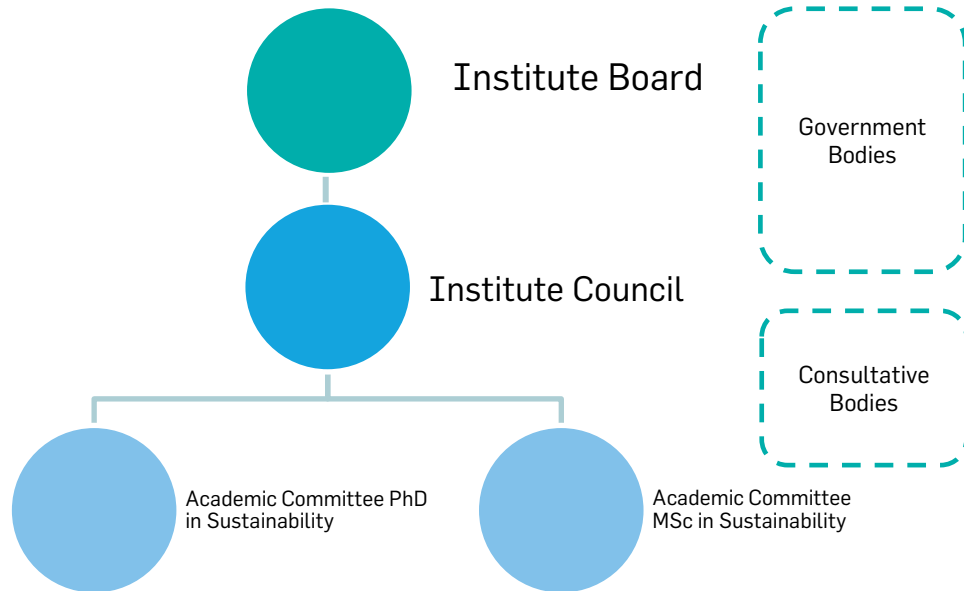
Finally, I would like to highlight the national and international recognition that our institute is achieving in sustainability science, with many of the research groups that constitute an outstanding international reference in their areas of expertise.

I would like to express my profound gratitude to the whole of the ISST.UPC personnel, at every professional level for their dedication, motivation and enthusiasm!

Jordi Segalàs, director

2. ORGANIZATION STRUCTURE

2.1. ORGANIZATION CHART



2.2. INSTITUTE BODIES

Single-member bodies

Jordi Segalàs i Coral

Director

Miriam Villares Junyent

Secretary

Martí Rosas Casals

Deputy Director

2.3. COLLEGIATE BODIES OF GOVERNMENT AND REPRESENTATION

Institute Board

| | |
|-----------------------------------|--|
| SEGALÀS CORAL, Jordi | <i>Director</i> |
| ROSAS CASALS, Martí | <i>Subdirector</i> |
| VILLARES JUNYENT, Miriam | <i>Secretària acadèmica</i> |
| ÀLVAREZ DEL CASTILLO, Xavier | |
| DE PABLO RIBAS, Joan | |
| JOSA GARCÍA-TORNEL, Alejandro | |
| MAGRINYÀ TORNER, Francesc | |
| MORATÓ FARRERAS, Jordi | |
| PÉREZ FOGUET, Agustí | |
| ROCA BOSCH, Elisabeth | |
| ROCA ROSELL, Antoni | |
| TRULLOLS FARRENY, Enric | |
| VELO GARCIA, Enrique | |
| TEJEDOR PAPELL, Gemma | <i>Research trainees</i> |
| LAZZARINI, Boris | <i>Research trainees</i> |
| ANLEHU CASTELLANOS, Elsy Gabriela | <i>Students' representative 1st year (2015 - 2016)</i> |
| LANDA, Julen | <i>Students' representative 2nd year (2014 - 2015)</i> |

Institute Council

SEGALÀS CORAL, Jordi

Director

ROSAS CASALS, Martí

Vice-director

VILLARES JUNYENT, Miriam

Academic Secretary

TEJEDOR PAPELL, Gemma

Researchers Staff

LAZZARINI, Boris

Administration Staff

LANDA, Julen

Students' representative

ÀLVAREZ DEL CASTILLO, Xavier

ALCARAZ SENDRA, Olga

CUCHÍ BURGOS, Albert

DE PABLO RIBAS, Joan

ESCRIBANO RODRIGUEZ DE ROBLES, Beatriz

GIBERT OLIVERAS, Karina

JOSA GARCÍA-TORNEL, Alejandro

MORATÓ FARRERAS, Jordi

PÉREZ FOGUET, Agustí

RIBA ROMEVA, Carles

ROCA BOSCH, Elisabeth

ROCA ROSELL, Antoni

SUREDA CARBONELL, Barbara

TRULLOLS FARRENY, Enric

VELO GARCIA, Enrique

XERCAVINS VALLS, Josep

2.4. COLLEGIATE BODIES FOR CONSULTATION

Academic Committee of the Master in Sustainability Science and Technology

| | |
|-----------------------------|--------------------------------------|
| ROSAS CASALS, Martí | <i>Master's academic responsible</i> |
| ALIER FORMENT, Marc | |
| CUCHÍ BURGOS, Albert | |
| DE PABLO RIBAS, Joan | |
| ETXEBERRIA LARRAÑAGA, Miren | |
| GASSÓ DOMINGO, Santiago | |
| GIBERT, Karina | |
| GIL ROIG, José María | |
| MAGRINYA TORNER, Francesc | |
| MIRALLES ESTEBAN, Núria | |
| MORATÓ I FARRERAS, Jordi | |
| PAGÈS RAMON, Anna | |
| PÉREZ FOGUET, Agustí | |
| SÁNCHEZ VILA, Xavier | |
| SEGALÀS CORAL, Jordi | |
| VIDAL LÓPEZ, Eva | |
| VILLARES JUNYENT, Míriam | |

Academic Committee of the PhD program in Sustainability

| | |
|----------------------------------|---------------------------|
| GIL ROIG, José María | <i>Chair and Director</i> |
| ROSAS CASALS, Martí | <i>Secretary</i> |
| ROCA ROSELL, Antoni Maria Claret | |
| VILLARES JUNYENT, Miriam | |
| de la FUENTE ANTEQUERA, Alberto | |

2.5. TEAM

2.5.1. TEACHING

2.5.1.1. Professors teaching in the Sustainability Science and Technology Master:

Agustí Pérez Foguet
Albert Cuchí Burgos
Albert Folch Sancho
Àlvar Garola
Anna Pagès Ramon
Arcadi de Bobes Picornell
Elisabet Roca Bosch
Eusebi Jarauta Bragulat
Eva Vidal Lopez
Francesc Magrinyà Torner
Jesús Bairan
Joan de Pablo Ribas
Jordi Morató Farreres
Jordi Segalàs Coral
Jose Maria Gil Roig
Josep Mercadé Aloy
Karina Gibert Oliveras
Lucia Fernandez
Marc Alier Forment
Maria Jose Casañ Guerrero
Maribel Ortego Martinez
Martí Rosas Casals
Miquel Sànchez-Marrè
Miren Etxeberria Larrañaga
Míriam Villares Junyent

2.5.1.2. PhD program in Sustainability

UPC researchers responsible for the mentoring and/or supervising of doctoral theses (2015/2016) were:

| | |
|------------------------------------|-------------------------------------|
| AGUADO, Antonio | LÓPEZ, David |
| ALIER FORMENT, Marc | MAGRINYÀ, Francesc |
| ÀLVAREZ DEL CASTILLO, Xavier | MAYORGA, Miguel |
| ALVAREZ DEL CASTILLO, Maria Dolors | MONTON LECUMBERRI, Joaquin |
| BACARDIT, Anna | MONTSERRAT, José |
| BOSCH, Ricard | MORATÓ, Jordi |
| CADAFALCH, Jordi | OLLÉ OTERO, Luis |
| CARRILLO, Fernando | ORTEGO, Maribel |
| CÒNSUL, Ricard | PÉREZ, Agustí |
| CREMADES OLIVÉ, Lázaro | PONS PUIGGRÓS, Lluís |
| CUCHÍ, Albert | QUERA MIRO, Manel |
| DE LA FUENTE ANTEQUERA, Albert | RIBA, Carles |
| DE FELIPE, José Juan | ROCA ROSELL, Antoni |
| DE PABLO RIBAS, Joan | ROCA, Elisabeth |
| DOMENECH LEGA, Bruno | RODRÍGUEZ CANTALAPIEDRA, Inmaculada |
| ESCRIBANO, Beatriz | ROSAS, Martí |
| FERRER MARTÍ, Laia | RUIZ, Rafael |
| FONSECA I CASAS, Pau | SEGALÀS, Jordi |
| FUERTES PÉREZ, Pere | TORRES, Antonio Luis |
| GARCIA ALMIÑANA, Jordi | TRULLOLS FARRENY, Enric |
| GARCÍA CARRILLO, Águeda | VELO, Enrique |
| GARRIDO, Núria | VIDAL, Eva |
| GIL, José Maria | VILLARES, Miriam |
| JOSA GARCÍA-TORNEL, Alejandro | XERCAVINS, Josep |
| KALLAS, Zein | |

2.5.2. UNDERGRADUATE TRAINEES

Number of master students:

Academic year 2015 - 2016

| | |
|--|----|
| Master in Sustainability Science and Technology | 46 |
| Students with a training undergraduate scholarship | 4 |

2.5.3. POSTGRADUATE SCHOLARSHIPS

Number of postgraduate scholarships in academic year 2015 - 2016:

PhD in Sustainability

| | |
|-----------------|----------|
| FPI UPC-FPU UPC | 3 |
| FPU | 1 |
| | 4 |

PhD in Environmental Engineering

| | |
|---------------------|-----------|
| FPI UPC-FPU UPC | 5 |
| FPU | 5 |
| FPI | 2 |
| FI | 5 |
| Marie Curie-ITN(UE) | 3 |
| CONACYT | 5 |
| | 25 |

| | |
|-------------------------------------|-----------|
| Total number of scholarships | 29 |
|-------------------------------------|-----------|

3. FINANCIAL INFORMATION

A description of ISST.UPC financial accounts for the fiscal year 2015 is summarized in this section.

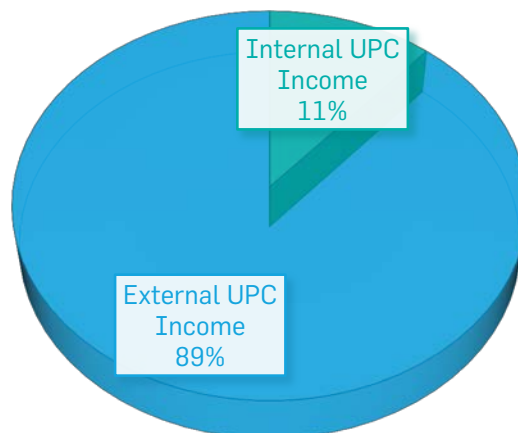
FINANCIAL ACCOUNTS

2015-16 OPERATIONAL INCOME (EUR)

| | UPC | EUROPEAN COMISSION | CATALAN GOVERNMENT | SPANISH GOVERNMENT | PRIVATE ENTITIES | TOTAL |
|-----------------------------|--------------------|-----------------------|-----------------------|-----------------------|---------------------|---------------------|
| INTERNAL | | | | | | 20.000,00 € |
| Cap 2 | 5.000,00 € | | | | | 5.000,00 € |
| 2015 Sustainable Plan | 15.000,00 € | | | | | 15.000,00 € |
| EXTERNAL | | | | | | 155.673,53 € |
| Competitive Projects | | 136.790,40 € | 2.420,00 € | 8.179,60 € | | 147.390,00 € |
| Others | | | 6.283,38 € | | 2.000,15 € | 8.283,53 € |
| TOTAL | 20.000,00 € | 136.790,40 € | 8.703,38 € | 8.179,60 € | 2.000,15 € | 175.673,53 € |

OPERATIONAL INCOME

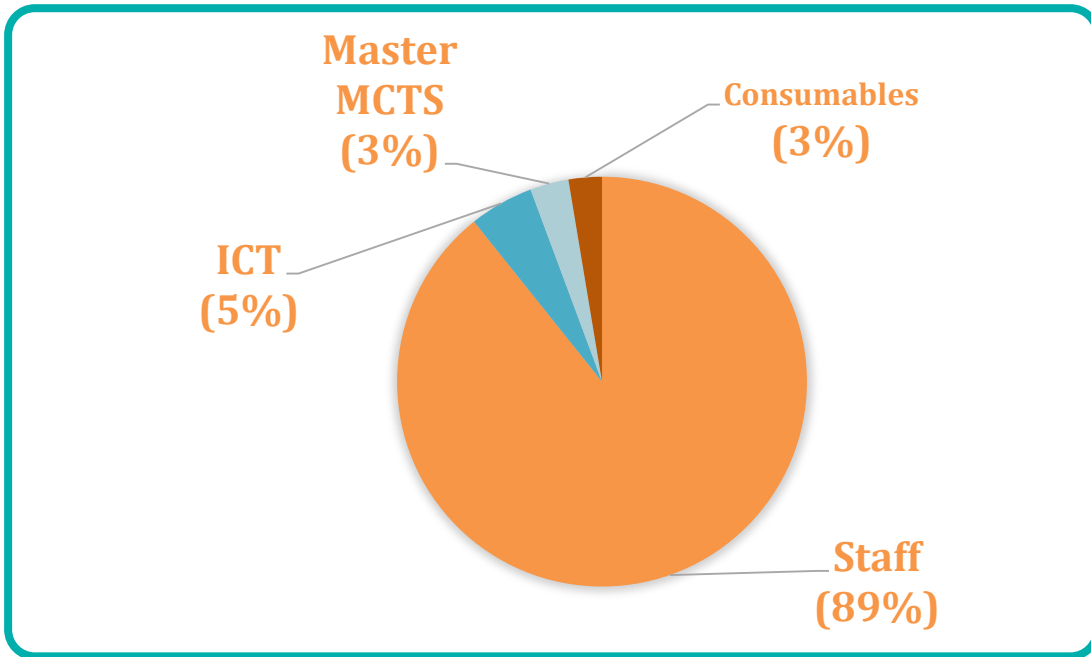
ISST.UPC INCOME 15-16



2016 OPERATIONAL OUTCOME (EUR)

| Concept | Expenses |
|---|--------------------|
| Staff | 55.816,82 € |
| Researcher 1 | 33.301,07 € |
| Researcher 2 | 21.737,98 € |
| interns | 777,77 € |
| Master Sustainability Science and Technology | 1850 |
| ICT | 3.135,00 € |
| Consumables | 1800 |
| TOTAL | 62.601,82 € |

OPERATIONAL OUTCOME



El ApS por tanto, tendrá dimensiones de investigación, sensibilización y formación buscando la generación de vínculos entre ciudad de BCN y los territorios afectados por las infraestructuras gasísticas, con un enfoque crítico y de justicia social hacia la incidencia política.

4. TEACHING

4.1. MASTER'S DEGREE IN SUSTAINABILITY SCIENCE AND TECHNOLOGY

The master's degree in Sustainability Science and Technology aims to provide students with advanced interdisciplinary training to facilitate understanding of interactions between society, the economy and the environment. Graduates will also have a sound understanding of scientific and technical options and trends for tackling key challenges for the sustainable development of current socio-environmental systems.

The course will train students to become entrepreneurs and agents of change in the field of sustainable development. Based on their specialisation in areas related to biodiversity, the environment, the built environment, services, the production system and information management, graduates will be able to design, implement and evaluate sustainable solutions in different fields of engineering and technology. Graduates will work in various cultural and professional contexts, applying a transdisciplinary approach based on scientific and technical rigour.

This master's degree has received the International **Master's Programme distinction** (2013 call) awarded by the Government of Catalonia's Agency for the Management of University and Research Grants (AGAUR).

The Master in Sustainability Science and Technology was validated by the Universities Council's Curriculum Validation and Accreditation Committee in July 2013.

Courses offered in academic year 2015-2016:

Mandatory courses

| Code | Subject | Professor |
|--------|---|-----------------|
| 480011 | Fundamentals of Economics, Environmental Economics and Ecological Economics | José María Gil |
| 480012 | Fundamentals of Engineering, Sustainability and Development | Agustí Pérez |
| 480021 | Fundamentals of Mathematical and Systemic Sustainability Modelling | Martí Rosas |
| 480022 | Fundamentals of Applied Statistics and Sustainability and Development Measurement | Agustí Pérez |
| 480041 | Fundamentals of Social Sciences and Approaches to Socio-Environmental Conflicts | Míriam Villares |
| 480051 | Fundamentals of Geosciences and Geographic Information Systems | Xavier Sánchez |
| 480031 | Fundamentals of Ethics, Business and Innovation | Marc Alíer |
| 480032 | Fundamentals of Sustainable Management and Environmental Management Systems | Santiago Gassó |
| 480042 | Research-Action Workshop on Sustainability Science and Technologies | Jordi Segalàs |

Elective courses

| Code | Subject | Professor |
|---------------|---|-------------------|
| 480602 | Construction and building engineering and technologies ⁽¹⁾ | Miren Etxeberria |
| 480081 | Urban Metabolism and Ecological Urbanism ⁽¹⁾ | Francesc Magrinya |
| 480091 | Information and Communication Technologies | Eva Vidal |
| 480111 | Integral Management of Urban and Ecological Water Cycles | Núria Miralles |
| 480092 | Industrial Ecology ⁽¹⁾ | Joan De Pablo |
| 480071 | Biodiversity and Socio-Ecological Systems ⁽¹⁾ | Jordi Morató |
| 480511 | Urban and regional development ⁽¹⁾ | F. Magrinyà |
| 480083 | Regional and Transport Infrastructure Metabolism ⁽¹⁾ | Francesc Magrinya |
| 480131 | Energy Efficiency in Building Construction | Albert Cuchí |
| 480132 | Building Construction Metabolism and Construction Projects | Anna Pagès |
| 480152 | Sustainable Design of Products and Services ⁽¹⁾ | Jordi Segalàs |
| 480171 | Complex and Socio-Environmental Networks ⁽¹⁾ | Martí Rosas |
| 480521 | International Cooperation for Development | Míriam Villares |
| 480093 | Socio-Environmental Data Science | Karina Gibert |

⁽¹⁾ Subjects taught in English language. Exams can be taken in Catalan, Spanish or English

Defended TFMs

Transdisciplinary improvement on an isolated living model (2015-10)

Life cycle assesment of waste management system (2015-10)

Urban water : harvesting rainwater at household level to improve the current water metabolism in Cuenca, Ecuador (2015-10)

Análisis de las relaciones sociales; percepción y uso del espacio urbano en promociones residenciales con muros Ciegos (2015-10)

Análisis bajo criterios energéticos y sostenibles de un centro docente en Les Franqueses del Vallès (2015-10-14)

Evaluación ambiental de un proyecto tradicional vs un edificio de consumo casi nulo, analizando cuando la energía de los materiales será más alto que el uso de energía durante la vida (2016-02)

Uso de agua gris y agua pluvial en desarrollos urbanos de alto poder adquisitivo en México (2016-06-16)

Conocimientos tradicionales: Etnobotánica de las mujeres en los huertos de la localidad de San José de Rincón, Puebla, México (2016-06-30)

Applying quantitative methods to the analysis of coastal risk governance and perception in Catalonia (2016-06-30)

Indicadores cualitativos ambientales y socio-espaciales para el análisis urbano aplicado al estudio de la movilidad urbana, en la ciudad de Hermosillo, Sonora (México) (2016-06-30).

4.2. DOCTORAL PROGRAM IN SUSTAINABILITY

Sustainability research involves specialists from different origins and backgrounds with a variety of disciplinary perspectives but with the common will to contribute to the development of society by providing future generations with the options and skills required to forge their own path.

The doctoral programme in Sustainability encompasses the research and courses that deal with the current challenges to sustainability: exhaustion, distribution and management of natural resources, including energy and water; climate change impacts and adaptation and mitigation mechanisms; modelling of socio-environmental systems and assessment of their evolution and development; poverty and imbalances in urban and rural environments; technological innovation and integrated concepts in construction, architecture and management of public services and the environment; and preservation and promotion of environmental and cultural heritage.

Sustainability science and technology is a highly interdisciplinary field of research that offers the opportunity to make original contributions in understanding and solving problems that affect the welfare and development of peoples and societies, and in shaping a new perspective from which to analyse our reality, integrating approaches from different disciplines and embracing the very agents of change.

This programme, in which highly diverse research lines and fields of interest converge, may benefit from cross-disciplinary exchange between the different research lines. For this reason, in addition to the activities in which each research group is involved, a framework for discussion of research in progress is provided in the form of the Research Monitoring and Support Working Session. This session is held every academic year and is open to all doctoral candidates and lecturers who are interested in sustainability science and technology.

The doctoral programme in Sustainability was validated by the Universities Council's Curriculum Validation and Accreditation Committee, in accordance with the provisions of Royal Decree 99/2011, of 28 January, regulating official doctoral studies. The first academic year under Royal Decree 99/2011 was 2013-14.

PhD in Sustainability – Facts & Figures 2015-16

| | |
|---|-----------|
| Access and enrolment | |
| New doctoral students | 33 |
| Doctoral students already enrolled | 66 |
| Total students | 99 |
| Defended thesis proposals / Research plans | |
| Thesis proposals | 1 |
| Research plans | 17 |
| Total thesis proposals / research plans defended | 18 |
| Doctoral graduates / read doctoral thesis | |
| Total doctoral graduates / read doctoral thesis | 10 |

4.3. DOCTORAL PROGRAM IN ENVIRONMENTAL ENGINEERING

The doctoral programme in Environmental Engineering provides doctoral students with advanced training and a high capacity for research in the field of environmental engineering, that is, having a knowledge and understanding of the impacts on the environment, both derived from human activities and natural processes, with the ability to evaluate the interactions between them, and the ability to propose and define possible actions to protect and recover the environment.

This programme is a multidisciplinary training framework in an international context that allows doctoral students to obtain the scientific, methodological and technical skills to address the challenges of innovation and research that society demands in the field of environmental engineering. It can be considered the first doctoral programme in Environmental Engineering imparted in Spain. Additionally, it has the purpose of increasing internationalization and quality requirements defined by the "mention to excellence" of the PhD program in Environmental Engineering.

The doctoral degree in Environmental Engineering has been an interdepartmental programme since May 1999. The Institute for Sustainability Science and Technology, which began to contribute to the programme in the 2011-2012 academic year, manages the programme and provides coordination support.

On 15 November 2013 was announced in the Official Gazette of the Spanish Government the validation of the doctoral degree in Environmental Engineering by the Universities Council's Curriculum Validation and Accreditation Committee, in accordance with the provisions of Royal Decree 99/2011, of 28 January, regulating official doctoral studies.

PhD in Environmental Engineering – Facts & Figures 2015-16

| | |
|---|-----------|
| Access and enrolment | |
| New doctoral students | 15 |
| Doctoral students already enrolled | 32 |
| Total students | 47 |
| Defended thesis proposals / Research plans | |
| Thesis proposals | 0 |
| Research plans | 10 |
| Total thesis proposals / research plans defended | 10 |
| Doctoral graduates / read doctoral thesis | |
| Total doctoral graduates / read doctoral thesis | 12 |

5. DISSERTATIONS

5.1. DOCTORAL PROGRAM IN SUSTAINABILITY

5.1.1 PhD theses read during academic year 2015 - 2016

Tollin, Nicola

Thesis title: A Resilience Transition for Sustainable Urban Development: A process design methodology to support participatory decision making

Supervisor: Alvarez del Castillo, Javier

Reading date: 17/12/2015

Vargas Collazos, Monica

Thesis title: Proyectos territoriales antagónicos y anticooperación simbólica en las megainfraestructuras sudamericanas

Supervisor: Alvarez del Castillo, Javier

Reading date: 01/02/2016

Vallejo Rojas, Virginia Beatriz

Thesis title: ACTIVE TRANSFORMATIVE PATHWAYS FOR LOCAL AGRI-FOOD SYSTEMS. Drawing and applying an integrated framework to assess vulnerability of agri-food systems under the political paradigm of food sovereignty in a case study in Ecuadorian Andes

Supervisor: Rivera Ferre, Marta Guadalupe | Ravera, Federica

Reading date: 15/09/2016

Saporiti, Giovanna Francesca

Thesis title: Sopravvivere alla città. Valutare il neoecosistema resiliente nella relazione tra l'acqua e la forma urbana

Supervisor: Cuchí Burgos, Alberto | Scudo, Giovanni

Reading date: 02/11/2016

Poli, Elena

Thesis title: Can Social Capital help Indian smallholder farmers? Analysis of its impact on rural development, agricultural efficiency, production and risk.

Supervisor: Serra Devesa, Teresa

Reading date: 26/01/2016

Pinzón Botero, María Victoria

Thesis title: La "práctica aplicación" de la sostenibilidad ambiental en el ordenamiento territorial urbano. Propuesta conceptual y metodológica para ciudades medias-intermedias de Colombia. El caso de: Palmira, Tuluá y Buga. Colombia

Supervisor: Velásquez Barrero, Luz Stella | Alvarez del Castillo, Javier

Reading date: 09/06/2016

Pascual Pellicer, Jordi Martí

Thesis title: Directrices energéticas integrales en edificios de oficinas transparentes (TOBEE)

Supervisor: Garrido Soriano, Nuria

Reading date: 14/01/2016

Masseck, Torsten Andreas

Thesis title: Teaching Sustainability: Living Labs in Architecture. A framework proposal for Living Lab eco-systems for teaching, research and innovation in the field of sustainable architecture and ESD in higher education. Specific case study: Living Lab LOW3 (UPC - BarcelonaTech)

Supervisor: Cuchí Burgos, Alberto

Reading date: 05/02/2016

Londoño Linares, Juan Pablo

Thesis title: Modelización de problemas ambientales en entornos urbanos: deslizamientos de tierra en ciudades andinas

Supervisor: Felipe Blanch, Jose Juan

Reading date: 03/02/2016

Llistar Bosch, David

Thesis title: Anticooperación Norte Sur. Cuando la coherencia es más importante que la ayuda. El caso de Ecuador y la "cooperación" española

Supervisor: Subirats Humet, Joan | Alvarez Del Castillo, Javier

Reading date: 29/01/2016

Landeros Suárez, Arturo

Thesis title: Conocimiento y percepción ambiental sostenible en la arquitectura del desarrollo de la agroindustria. Casos de estudio Argentina y Paraguay.

Supervisor: Alvarez Del Castillo, Javier

Reading date: 05/02/2016

5.1.2 Theses proposals and research plans defended during academic year 2015 – 2016

| |
|--|
| A circular commons of digital devices |
| Propuesta metodológica para la implantación del análisis de riesgo en las auditorías de eficiencia energética |
| (Wetwall system) as an innovative wastewater treatment and thermal insulation technology |
| Soberanía del conocimiento tradicional indígena en la amazonia colombiana – el pueblo Andoke de Aduche |
| Evaluación del impacto de la capacidad tecnológica en la sostenibilidad empresarial del sector agroalimentario primario |
| Servicios ecosistémicos en sistemas de producción hortícola de la región del oriente antioqueño, Colombia |
| Aplicación de la metodología MIVES para la toma de decisiones en materia de i+d en el ámbito empresarial |
| Modelización de un proceso de gestión sostenible de aparatos tic dentro de las organizaciones |
| Factors affecting the engagement of academics of engineering studies towards sustainable development |
| Tecnologías apropiadas para la gestión sostenible de los recursos hídricos, la reducción de la vulnerabilidad y el fomento del desarrollo comunitario participativo en procesos de recuperación socio-ambiental en zonas urbanas degradadas de américa latina. |
| The management of fire complexity at the edge of criticality. From analysis of fire case studies, to a Synthesis approach for Mediterranean forest landscapes and for emergency management organizations |
| Cambio climático en México, efectos e implicaciones en salud humana |
| Propuesta metodológica para la evaluación de la inversión pública en proyectos de transformación socio-ambiental, estudio de caso en el proyecto del morro de Moravia, Medellín, Colombia |
| Alcances del metabolismo social enfocado a la gestión del agua. Aplicación de la herramienta MUSIASSEM en el estado de Yucatán, México |
| Ciudades progresivas: Hacia un metabolismo urbano sostenible, espacio público y movilidad en Ciudad Juárez Sostenibilidad urbana: marco de indicadores para medir la sostenibilidad en la iluminación de la vía pública |
| Sustainability in the recruitment process of companies in the food sector in Germany – an analysis of the usage of the concept of sustainability in job descriptions in Germany |
| Las fachadas de alta eficiencia energética para climas mediterráneos, un reto para los técnicos |

5.2. DOCTORAL PROGRAM IN ENVIRONMENTAL ENGINEERING

5.2.1 PhD theses read during academic year 2015 - 2016

Spada, Michele

Thesis title: Development and evaluation of an atmospheric aerosol module implemented within the NMMB/BSC-CTM

Supervisor: Jorba Casellas, Oriol | Baldasano Recio, Jose M.

Reading date: 23/11/2015

Silvestre Tormo, Gracia María

Thesis title: Sewage sludge anaerobic digestion. Study of synergies and operational strategies of co-digestion

Supervisor: Bonmatí Blasi, August | Fernández García, Belén

Reading date: 30/10/2015

Flores Baquero, Óscar

Thesis title: Development of methods for monitoring the water and sanitation sector at different scales through human rights lenses

Supervisor: Pérez Foguet, Agustí | Jiménez Fernández De Palencia, Alejandro

Reading date: 09/10/2015

Valverde Morales, Víctor Manuel

Thesis title: Characterization of atmospheric pollution dynamics in Spain by means of air quality modelling

Supervisor: Baldasano Recio, Jose M. | Pay Pérez, María Teresa

Reading date: 08/04/2016

Suárez Silgado, Sindy Sofía

Thesis title: Propuesta metodológica para evaluar el comportamiento ambiental y económico de los residuos de construcción y demolición (RCD) en la producción de materiales pétreos

Supervisor: Roca Ramon, Xavier

Reading date: 04/02/2016

Roig Planasdemunt, Maria

Thesis title: Characterization of hydrological processes in a Mediterranean mountain research catchment by combining distributed hydrological measurements and environmental tracers

Supervisor: Llorens Garcia, Pilar | Latron, Jérôme

Reading date: 27/06/2016

Gutiérrez Martínez, Raquel

Thesis title: Microalgae harvesting in wastewater treatment plants: Application of natural techniques for an efficient flocculation

Supervisor: Garcia Serrano, Joan | Ferrer Marti, Ivet | Uggetti, Enrica

Reading date: 03/05/2016

González Juncà, Arnau

Thesis title: Combined Heat and Power Generation Systems for Optimum Environmental and Economic Performance: a case study in Catalonia

Supervisor: Rius Carrasco, Antoni | Riba Ruiz, Jordi Roger

Reading date: 21/06/2016

Borkel, Christoph

Thesis title: Understanding the mobility of caesium, nickel and selenium released from waste disposal: Chemical retention mechanisms of degraded cement

Supervisor: Bruno I Salgot, Jorge | Grivé Solé, Mireia

Reading date: 21/01/2016

Bori Dols, Jaume

Thesis title: Ecotoxicological bioassays as complementary tools for the risk assessment of contaminated soils

Supervisor: Riva Juan, Maria Carmen

Reading date: 29/06/2016

Banks, Robert Franklin

Thesis title: Assessment of planetary boundary-layer schemes with advanced remote sensing instruments and air quality modelling

Supervisor: Baldasano Recio, José M. | Gassó Domingo, Santiago

Reading date: 21/01/2016

Garcia Almiñana, Daniel

Thesis title: Millores de la Metodologia per al Desenvolupament d'Auditories Energètiques

Supervisor: Cabeza Fabra, Lluïsa F.

Reading date: 01/09/2015

5.2.2 Theses proposals and research plans defended during academic year 2015 - 2016

Production of bioplastics from cyanobacteria grown in wastewater

Evaluation of the impact of emerging pollutants on maritime media

Syntheses and applications from theoretical ecology to constructed treatment wetlands

On-line coupling of volcanic ash and aerosols transport with global and regional meteorological models

Characterization of the aerosol radiative effects on climate by using on-line regional chemistry-climate models

Development and evaluation of a street scale air quality modelling system over Barcelona

Subsurface as a bioreactor: interaction between physical heterogeneity and microbial processes

Application of the MALDI TOF/MS and imaging analytical technique to the study of the interaction between anthropogenic organic matter and aquatic ecosystems (natural and artificial)

Anaerobic digestion of substrates with a high content of fats and nitrogen: from microbial interactions to process optimization

Strategies to improve microalgae anaerobic digestion from algal-based wastewater treatment systems

6. PUBLICATIONS

6.1. SCIENTIFIC PRODUCTION

The research activities and production of ISST.UPC members are included in the following link:

<http://futur.upc.edu/ISUPC>

7. ACTIVITIES

7.1. RESEARCH SEMINARS AND WORKSHOPS

Seminario de investigación IS.UPC: “Derecho humano al agua y el saneamiento. Marco de análisis para ámbitos metropolitanos. Lima - Barcelona 2016”

Fecha: 5 de Febrero de 2016

Lugar: UPC Campus Nord

El día 5 de Febrero tuvo lugar en la UPC un seminario en el que se presentaron dos proyectos de investigación llevados a cabo o planificados desde un enfoque del Derecho Humano al Agua y Saneamiento (DHAS). Por un lado, se presentó un proyecto ejecutado en el entorno metropolitano de Barcelona por un grupo de voluntarios del IS.UPC. Los resultados presentados ofrecieron una diagnosis asociada a la realidad de los grupos vulnerables en cuanto al nivel de servicio de agua y saneamiento. Por otro lado, se introdujo otro proyecto que se realizará en los próximos meses en la ciudad de Lima (Perú). El objetivo principal de esta investigación reside en definir un marco conceptual de apoyo a la toma de decisiones en relación a la prestación de servicios de agua y saneamiento y coherente con el enfoque del DHAS.

Spekers: Ricard Giné Garriga, Helena Grau Huguet y Miquel Fábregas López

No hay enlace web disponible.

Jornada de doctorands (15-16)

Sessió d'obertura del màster (15-16)

- Lliçó inaugural a càrrec de Arnim Wiek, Senior Sustainability Scientist, Julie Ann Wrigley Global Institute of Sustainability Associate Professor, School of Sustainability

8. ANNEX

Academics with formal adscription to IS.UPC and research activity related:

- ALCARAZ SENDRA, Olga (futur.upc.edu/OlgaAlcarazSendra)
- ÀLVAREZ DEL CASTILLO, Xavier (<http://futur.upc.edu/JavierAlvarezDelCastillo>)
- CUCHÍ BURGOS, Albert (<http://futur.upc.edu/AlbertoCuchiBurgos>)
- DE PABLO RIBAS, Joan (<http://futur.upc.edu/JoandePabloRibas>)
- ESCRIBANO RODRIGUEZ DE ROBLES, Beatriz (futur.upc.edu/BeatrizEscribanoRodriguezdeRobles)
- GIBERT OLIVERAS, Karina (futur.upc.edu/karinaGibert)
- JOSA GARCÍA-TORNEL, Alejandro (<http://futur.upc.edu/AlejandroJosaGarciatornel>)
- MORATÓ FARRERAS, Jordi (<http://futur.upc.edu/JordiMoratoFarreras>)
- PÉREZ FOGUET, Agustí (<http://futur.upc.edu/AgustiPerezFoguet>)
- RIBA ROMEVA, Carles (<http://futur.upc.edu/CarlesRibaRomeva>)
- ROCA BOSCH, Elisabeth (<http://futur.upc.edu/ElisabetRocaBosch>)
- ROCA ROSELL, Antoni (<http://futur.upc.edu/AntonimariaClaretRocaRosell>)
- ROSAS CASALS, Marti (<http://futur.upc.edu/MartiRosasCasals>)
- SEGALÀS I CORAL, Jordi (<http://futur.upc.edu/JordiSegalasCoral>)
- SUREDA CARBONELL, Barbara (futur.upc.edu/BarbaraSuredaCarbonell)
- TRULLOLS FARRENY, Enric (<http://futur.upc.edu/EnricTrullolsFarreny>)
- VELO GARCÍA, Enrique (<http://futur.upc.edu/EnriqueVeloGarcia>)
- VILLARES JUNYENT, Miriam (<http://futur.upc.edu/MiriamVillaresJunyent>)
- XERCAVINS VALLS, Josep (futur.upc.edu/JosepXercavinsValls)