

**International Energy Agency, Energy in Buildings and Construction,
Annex 83 Ph.D. Summer School****“Positive Energy Districts: Towards a holistic approach to modeling
and performance assessment”****Venue: Concordia University, Montreal (Canada)****Dates: July 1-8, 2022**

The concept of Positive Energy Districts (PED) is one of the most promising ones being developed towards the achievement of a true and proper decarbonization of the building sector at the international level.

PEDs are generally viewed as districts with annual net zero energy import, and net zero CO₂ emissions working towards an annual local surplus production of renewable energy.

These districts are a key part of the transformative process from carbon-intensive cities towards sustainable urban development through a diverse set of solutions, including technological ones (buildings' interaction, ICT, mobility, low-carbon building materials and technologies) as well as legal, economic and social ones.

This inherent complexity requires an integrated and holistic perspective in targeting all the PEDs, since the approach to a true decarbonization and effective optimization of the performances of a PED is a challenge for designers and practitioners.

In this framework, the International Energy Agency with its Energy in Buildings and Communities Programme Annex 83 is organizing a Summer School for graduate and students on the topic of Positive Energy District performance assessment and energy modeling.

The Summer School aims to analyse Positive Energy Districts in a holistic and integrated perspective, including energy modeling, energy system planning, building retrofit of existing districts, and environmental, social and economic sustainability of PEDs.

The Summer School will include both lectures and class exercises on energy efficiency and renewable energy integration strategies and performance assessment for different district scale case studies from Italy, Canada, Spain and Netherlands.

The course will take place in person between **July 1st and 8th** in Montreal at Concordia University and will include some prior online preparation meetings.

No participation fee is required. The participation is expected to be on-site, but in case of travel restrictions, the possibility for online participation will be provided.

Students participating in the summer school and achieving the learning objectives of the course will be able to:

- Achieve a thorough understanding of the specific issues in the design of Positive Energy Districts, with attention to the planning, implementation and operating stages;
- Gain insight on data quality and standardization, energy modeling solutions, and renewable technologies when dealing with Positive Energy Districts;
- Connect energy design issues and urban planning applications to sustainability issues, including environmental, economics and social implications;
- Perform informed decisions in a PED design process, taking into consideration the available opportunities and potentiality for the PED implementation or transition, and focussing on strengths and weaknesses of different operating scenarios.

Registration is available until April 15th (or until the students registration limit is met), at the link below.

Link: <https://forms.gle/SardhvhwSzeMrqxJ8>

Students with a background in energy, environmental, civil, electrical mechanical, software engineering, urban studies, architecture or similar are welcome. The summer school (course number ENCS 691) is part of the Engineering program at the Department of Buildings, Civil and Environmental Engineering and provides 4 credits. Moreover, to obtain the credits, students must apply as visiting international students (<https://www.concordia.ca/admissions/graduate/requirements/visiting-students.html>). International tuition fees will apply and can be calculated using the tuition fee calculator (<https://www.concordia.ca/admissions/tuition-fees/calculator.html>)

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