

Energy efficiency in buildings



En bref

- > **Langues d'enseignement:** Anglais
- > **Méthodes d'enseignement:** En présence
- > **Forme d'enseignement :** Cours magistral
- > **Ouvert aux étudiants en échange:** Oui

Présentation

Description

- * Semester 9
- * Duration : Within one semester
- * Type: Mandatory
- * Student workload: Lecture (CM): 18 hours + hours of self-study
- * Applicability: SOLEM course only
- * Teaching and learning method : seminar, practice, project
- * Module examination: 1 written exam (50%), 1 individual oral presentation 1 written exam (50%)

Responsible person for the module: Dorothée Charlier

Senior lecturer and researcher, Université Savoie Mont Blanc, IAE, Laboratory IREGÉ

Objectifs

Major intended learning outcomes:

This course examines the economic dimensions of energy efficiency in buildings. It explores the financial, regulatory, and market-driven factors influencing energy-saving measures in residential and commercial constructions. Students will analyze cost-saving potentials, investment strategies, and the economic impact of energy efficiency standards and policies.

By the end of this course, students will be able to:

- * Understand the economic principles underlying energy efficiency investments in buildings.
- * Analyze financial mechanisms and incentives that promote energy efficiency.
- * Evaluate the cost-effectiveness of energy-efficient technologies and retrofits.
- * Assess the impact of regulatory policies on market behaviors and investment decisions.

Correspondence between major intended learning outcomes and assessment:

Students should have the ability to connect seminar and learnings in empirical studies in energy efficiency and in energy efficiency of building.

Heures d'enseignement

Energy efficiency in buildings - CM

Cours Magistral

18h

Pré-requis obligatoires

Basic knowledge in economics and cost-benefit analysis

Plan du cours

Content of the module:

- * Introduction 1,5 h Dorothée Charlier
- * Overview of energy consumption in buildings
- * Economic theories related to energy efficiency
- * Presentation of the project 1,5h Dorothée Charlier + 12h empirical case studies in energy efficiency
- * Seminar: energy efficiency and architecture- external presentation –3h
- * Seminar: energy efficiency and fuel poverty – external presentation – 3h
- * Seminar: energy efficiency – drivers and limit to energy efficiency renovation – external presentation – 3h
- * Seminar: energy efficiency, adaptation and vulnerability – external presentation – 3h

Group Project:

Students will work in groups to analyze a real-world building or project, applying economic analysis tools to evaluate the feasibility and impact of various energy efficiency measures. The project culminates in a presentation and a written report.

Bibliographie

P. Baudry, Efficacité énergétique Des principes aux réalités, ed Lavoisier tec & doc

M.A. Brown, Market failures and barriers as a basis for clean energy policies. Energy Policy 29 (2001) 1197-1207.

S.J. DeCanio, Barriers within firms to energy-efficient investments. Energy Policy 21 (1993) 906-914.

R. Franck, G. Jover et P. Hovorka, L'efficacité énergétique du bâtiment, optimiser les performances énergétiques, le confort et la valeur des bâtiments tertiaires et industriels, ed Eyrolles.

C. Henry, Investment Decisions Under Uncertainty: The "Irreversibility Effect". American Economic Review 64 (1974) 1006.

A.B. Jaffe, R.G. Newell, R.N. Stavins, J.C.J.M. van den Bergh, K. Button, and P. Nijkamp, Environmental Policy and Technological Change, Environmental Planning, Elgar Reference Collection. Classics in Planning, vol. 8.. Cheltenham, U.K. and Northampton, Mass.: Elgar, 2007, pp. 197-225.

Infos pratiques

Lieux

› Le Bourget-du-Lac (73)

Campus

› Le Bourget-du-Lac / campus Savoie Technolac