

Environmental certifications of buildings



SCHOOL

Polytech Graduate School of
Engineering



CAMPUS

Belle-Beille



LEVEL

Engineering 3rd year



OPEN TO EXCHANGE STUDENTS

Yes



SEMESTER

Spring (S2)

- > **Degree course:** Building and Safety
- > **Teaching unit:** Energy and Fluids
- > **Course language:** English
- > **Duration (hours):** 9.33
- > **ECTS:** 1
- > **Teacher(s):** Marie-Lise PANNIER

> Assessment:

- Continuous assessment
- Final exam

> Teaching methods:

- | | | | |
|-----------------------------------------------------|------|-------|-------------------------------------|
| <input checked="" type="checkbox"/> Lecture course | 5.33 | hours | <input type="checkbox"/> Case study |
| <input checked="" type="checkbox"/> Tutorial course | 4 | hours | <input type="checkbox"/> Project |
| <input type="checkbox"/> Practical work | | hours | |

COURSE DESCRIPTION

Major issues of sustainable buildings

- o Environment (Energy, Water, Waste, Transport, Construction, Biodiversity, Materials, Equipment?>s)
- o Wellbeing/Health
- o Economics (Maintenance, using charges, continuity of functioning)
- o Communication and enhancement
- o Certifications ? tools for continuous improvement and enhancement of existing buildings
- o Environmental certifications for existing buildings (main principles, benefits, overview of environmental certifications for existing buildings)
- o Presentation of the HQE Exploitation certification (SMEx/SMG, Categories, Bâtiment Durable/Gestion Durable/Utilisation Durable axes, Assessment process, Presentation of a real case)
- o Presentation of the BREEAM In Use certification (Categories, Asset/Building Management/Occupier Management axes, Assessment process, Presentation of a real case)
- o Presentation of the LEED EBOM certification (Categories, Assessment process, Prerequisites presentation)
- o Presentation of the DGNB certification
- o Comparison of the HQE Exploitation, BREEAM In Use and LEED EBOM certifications (strong and weak points)
- o E+C- label
- o A step further: healthy buildings
- o Major issues of healthy buildings
- o WELL Building Standard certification
- o Introduction to life cycle assessment

OBJECTIVES

- To know the major issues of sustainable buildings
- To know the aims and performance requirements of environmental certifications for existing buildings.
- To understand how to manage environmental certifications for existing buildings.
- To identify the most adapted environmental certification for one existing building, depending on the context and the actors involved.

PREREQUISITES

Knowledge of building actors and links between them

SELECTIVE BIBLIOGRAPHY

- Referential HQE Exploitation ? CERTIVEA Website.
- Referential BREEAM In Use ? BREEAM Website.
- Referential LEED EBOM ? USGBC Website.
- Referential DGNB ? DGNB Website.
- Referential WELL Building Standard ? IWBI Website.