| Title (Budownictwo energooszczędne) | Code 1010102221010130381 |
|---|---|
| Field **Environmental Engineering Second-cycle Studies** | Year / Semester **1 / 2** |
| Specialty **-** | Course **core** |
| Hours Lectures: **2**  Classes: **-**  Laboratory: **-**  Projects / seminars: **-** | Number of credits **2** |
| | Language **polish** |

**Lecturer:**

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**Status of the course in the study program:**

> Core course

**Assumptions and objectives of the course:**

> The main aim of the course is to present and discuss general principles and method used and practical examples.

**Contents of the course (course description):**

> Idea ? low energy buildings. Principles of low energy buildings design and buildings services design. Development in low energy buildings design. Passive houses and public buildings. Energy performance of buildings. Models and procedures of indoor climate and indoor air quality design. Whole design of low energy buildings. Building energy systems simulation. Computers programs of buildings simulation. Energy and heat balance of buildings and selection of heating and air conditioning systems for low energy buildings. Air tightness and ventilation systems. Ventilation systems in dwelling low energy buildings. Hybrid ventilation. Night cooling. Atrium buildings ventilation. LCA of buildings. Energy and ecology assessment of buildings and buildings materials. Integrated systems of sustainable development in buildings construction.

**Introductory courses and the required pre-knowledge:**

> Basic knowledge: buildings construction, thermal and heat engineering, ventilation, air conditioning and refrigeration.

**Courses form and teaching methods:**

> Lecture with transparent projector.

**Form and terms of complete the course - requirements and assessment methods:**

> Written classes, written tests.

**Basic Bibliography:**


**Additional Bibliography:**

http://www.put.poznan.pl/