

Faculty of Architecture

Department: Construction Engineering

Professional field: 5.7. Architecture, Civil Engineering and Geodesy

Specialty: Building Constructions

Educational-qualification degree: Master

COURSE DESCRIPTION

1. Course title: **Energy Efficiency and Solar Construction**
2. Course code: **CIE 3015**
3. Type of course: **compulsory**
4. Level of course: **Master**
5. Year of study: **first**
6. Semester when the course is delivered: **second**
7. Number of ECTS credits allocated: **4,5 (3 – lectures and 1,5 – seminars and coursework)**
8. Name of lecturer: **Assoc. Prof., Eng. Rositsa Petkova, PhD**
9. Learning outcomes of the course: as a result of the course students will know about the normative requirements on energy efficiency (EE,) methods for evaluating energy consumption in a building, for the conducted ECM, for solar construction in order to save energy and energy sustainability of the building by use of solar collectors and photovoltaics, will acquire skills to develop an energy passport and energy rating of the building.
10. Mode of delivery: **face-to-face**
11. Prerequisites and co-requisites: students have to possess some preliminary knowledge in Physics, Building and Insulation Materials, Energy-efficient Design and Construction Technologies.
12. Course contents: to form knowledge regarding the normative requirements for EE, methods and basic measures for their fulfillment, the application of contemporary technical means for reaching the energy indicators of the building, for the solar construction of facilities to improve EE with application of solar collectors and photovoltaic modules.
13. Recommended or required reading:
 - Закони и подзаконовни нормативни документи в областта на ЕЕ
 - Калоянов, Н., Шаранков, В., Хаджиева, Ил., Братанов М., Ръководство за обследване за енергийна ефективност и сертифициране на сгради, ТУ-София, 2006
 - Jackson, F., Dragon, G., Planning & Installing Photovoltaic Systems, Berlin, 2007
 - Калоянов, Н., Шушулов К., Хаджиева Кл., Братанов М., Изчисляване на годишен разход на енергия в сгради, ТУ-София, изд. "Софттрейд", 2006
 - Hurley, P., Build Your Own Solar Panel, Wheelock Mountain Publications, 2006
 - Christopher, L., Photovoltaics.Design and installation manual, Solr Energy international, 2004
14. Planned learning activities and teaching methods: **lectures, seminars, coursework, contact hours, independent work.**
15. Assessment methods and criteria: The evaluation methods are: a) written examination and further discussion during the examination session, as preparation is carried out on conspectus b) development and defense of an essay assignment, c) assessment in the training process - twice during the semester; d) development of parts of a possible topic for a thesis.
16. Language of instruction: **Bulgarian, English**
17. Work placement(s): **none**