Poznan University of Technology | European Credit Transfer System
Faculty of Civil and Environmental Engineering | Course description card

Course title:	Code:
Energy Management	ErS9
Field of study: Environmental Engineering	Year / semester: III
Specjality:	Course: compulsory
Hours / week: Lectures: 1 Tutorials: 0,5 Laboratories: 0 Project / Seminars: 0	Number of credits: 6

Lecturer: Tomasz Mróz, PhD, Dr Sc. Professor
Tel. +48 61 665 2900, +48 61 665 2438
e-mail: tomasz.mroz@put.poznan.pl

Institute / Faculty: Institute of Environmental Eng., Faculty of Civil and Environmental Engineering,
ul. Piotrowo 3a, 60 965 Poznań
tel. +48 61 665 2438, fax +48 61 665 2439
e-mail: office_ee@put.poznan.pl

Status of the course in the study program:
Core course for students of Environmental Engineering

Course description:
Overview of methods of energy, exergy and economy analysis in energy management. Application of energy, exergy and economy balances in efficiency analysis of building technical systems, co-generated production of heat, electricity and cooling energy systems. Formal aspects of energy audit procedures Overview of energy rating methods for buildings; Overview of energy planning methods with respect to community heating system modernization and development.

Teaching outcomes:
The main aim of the course is to revile the knowledge on energy, exergy and economy efficiency analysis of community energy systems and to present and discuss methods of building energy rating methods and energy audit procedures.

Prerequisites:
Basic knowledge of thermodynamics (energy, exergy and substantial balances) as well as of elementary economics (costs, profits, economy efficiency measures);

Teaching method:
Lectures (transparent and multimedia projector);
Tutorials – blackboard case study calculations.

Assessment method:
Written examination,
Written colloquium.

Bibliography:

1. Szargut J., Petela R.: Egzergia, WNT W-wa 1965 (in polish),
2. Szargut J. Termodynamika techniczna, WNT W-wa 1980 (in polish),
3. Szargut J., Ziębik A.: Podstawy energetyki cieplnej, WNT Warszawa 1998 (in polish),
4. Kreith F., West R.E.: Handbook of Energy Efficiency, CRC Press Inc. 2000,
5. Chmielniak T.J.: Technologie energetyczne WPŚ, Gliwice 2004 (in polish),
6. Marecki J.: Podstawy przemian energetycznych, WN PWN Warszawa 2002 (in polish),
7. Mróz T. Energy Management in Environmental Engineering, Manuscript 2010.