Politechnika Krakowska
im. Tadeusza Kościuszki

FACULTY: ENVIRONMENTAL ENGINEERING AND ENERGY

COURSE TITLE: Modeling of Energy Systems

Number of contact hours: 45

Duration: 1 semester (fall / spring)

ECTS credits: 4

Programme description: This course comprises lectures and computer simulations. It covers an understanding of the fundamentals and laws governing energy conversion, the analysis of cogeneration, combined and integrated cycles for conventional and advanced technologies, the operation and major components of electricity generating and CHP plants, selection the type of plant appropriate for a given application, analyses associated with each subsystem and component of the plant, creation of the mathematical model to assess particular energy system.

Course type: lectures (15), computer simulations (30)

Literature:

1. Reynolds W.C., Colonna P. Thermodynamics: Fundamentals and Engineering Applications. 1st Ed., Cambridge University Press, 2018
2. El-Wakil. M.M., *Power Plant Technology*, McGraw – Hill Publishing Company, 2002
3. Kehlhofer R., Rukes B., Hannemann F., Stirnimann F. *Combined-Cycle Gas & Steam Turbine Power Plants*. PennWell 2009
4. *Cycle-Tempo Reference Guide*. ASIMPTOTE, Delft, 2024

Assessment method: report from computer simulation

Lecturer: Tomasz Sobota

Contact person: Tomasz Sobota (e-mail: tomasz.sobota@pk.edu.pl)