



**FACULTY:** ENVIRONMENTAL ENGINEERING AND ENERGY

**COURSE TITLE:** Circular economy and renewable energy

**Number of contact hours:** 45

**Duration:** 1 semester (spring)

**ECTS credits:** 4

**Programme description:** The main aim of this course is introduction to problems related to depletion of natural resources and methods of introducing some raw materials into the circular economy. During the course students will get acquainted with the economic development policy in Poland, the European Union and selected OECD countries based on the principles of the circular economy. They will also learn to recognize basic conditions as well as difficulties in the implementation of the circular economy principle, especially in the area of municipal infrastructure.

The course focuses on a circular economy issues in a water and sewage sector including such problems as: plans and possibilities of water reclamation from municipal wastewater as well as sewage sludge and municipal waste as products supporting the mineral fertilizer production. Also circulation and renewable systems as a tool for meeting the energy production needs of cities and housing units will be analysed.

Students will discuss alternative and renewable energy sources potential users (Expert Choice, HIPRE). A site visit - an example of a company implementing the principles of the circular is offered during the course.

**Course type:** lectures (24), workshops (11), seminar (11)

**Literature:** Materials provided to students by lecturers on a regular basis,

**Assessment method:** a seminar project

**Lecturers:** dr hab inż., prof. PK Małgorzata Cimochowicz-Rybicka (kontakt: mcrybicka@pk.edu.pl)  
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