

Course code																																	
Type and description	Elective Course																																
ECTS credit	1																																
Course name	Industrial Ecology and Resource Recovery																																
Course name in Polish	Ekologia przemysłowa i odzysk surowców																																
Language of instruction	English																																
Course level	8 PRK																																
Course coordinator	Dr hab. inż. Elżbieta Sobiecka, prof. uczelni (0000-0003-0016-5510)																																
Course instructors	Dr hab. inż. Elżbieta Sobiecka, prof. uczelni (0000-0003-0016-5510)																																
Delivery methods and course duration	<table border="1"> <thead> <tr> <th></th> <th>Lecture</th> <th>Tutorials</th> <th>Laboratory</th> <th>Project</th> <th>Seminar</th> <th>Other</th> <th>Total of teaching hours during semester</th> </tr> </thead> <tbody> <tr> <td>Contact hours</td> <td>0</td> <td>0</td> <td>0</td> <td>15</td> <td>0</td> <td>0</td> <td>15</td> </tr> <tr> <td>E-learning</td> <td>No</td> <td>No</td> <td>No</td> <td>No</td> <td>No</td> <td>No</td> <td></td> </tr> <tr> <td>Assessment criteria (weightage)</td> <td></td> <td></td> <td></td> <td>1,00</td> <td></td> <td>0,00</td> <td></td> </tr> </tbody> </table>		Lecture	Tutorials	Laboratory	Project	Seminar	Other	Total of teaching hours during semester	Contact hours	0	0	0	15	0	0	15	E-learning	No	No	No	No	No	No		Assessment criteria (weightage)				1,00		0,00	
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Course objective	The aim of the course is to gain a basic knowledge concerning the industrial ecology according to the sustainability and the circular economy																																
Learning outcomes	After the course a student is able to: <ol style="list-style-type: none"> 1. Recall and interpret the fundamental problems of sustainable development in industrial ecology as the element of circular and linear economy – outcomes U4, K1 2. Classify and characterize methods of waste utilization – outcomes W4 3. Create the management plan of resources recovery after industrial processes – W4, U4, K1 																																
Assessment methods	Learning outcomes: 1, 2, 3 – written work and Project presentation Written work 50%; Project presentation - 50%																																
Prerequisites	The academics knowledge of ecology, biology, biotechnology and chemistry																																
Course content with delivery methods	<ol style="list-style-type: none"> 1. The fundamental knowledge concerning the circular economy with the industrial ecology according to the sustainable development. 2. Thermal, chemical and biological methods of waste utilization. 3. Examples of industrial processes with the resources recovery. 4. The practical knowledge concerning resources recovery in existing data bases. 5. Acquire skills required for the problem interpretation of chosen industrial processes with resources recovery 6. Project description and its presentation. 																																
Basic reference materials	<ol style="list-style-type: none"> 1. Marcello T., Cristoni N. 2018. Strategic Management and the Circular Economy. New York, Routledge 2. David W. Pearce, Turner R.K. 1989. Economics of Natural Resources and the Environment. Johns Hopkins University Press 3. Jackson T. 1993. Clean Production Strategies Developing Preventive Environmental Management in the Industrial Economy. CRC Press 																																
Other reference materials	-																																
Average student workload outside classroom	10h																																
Comments	-																																
Last update	25.01.2022																																