

<b>Course title</b> Wykład monograficzny - Technologie zaawansowanego utleniania/Monographic lecture - Advanced oxidation processes		<b>ECTS code</b> 13.3.1033	
<b>Name of unit administrating study</b> Faculty of Chemistry			
<b>Studies</b>			
<b>Field of study</b>	<b>Type</b>	<b>Form</b>	
Chemical business	Master	Full-time studies	
<b>Teaching staff</b> Prof. dr hab. Ewa Siedlecka			
<b>Forms of classes, the realization and number of hours</b>		<b>ECTS credits</b>	
<b>A. Forms of classes, in accordance with the UG Rector's regulations</b> Lecture		classes 30 h tutorial classes 10 h student's own work 35 h Total: 75 h - 3 ECTS	
<b>B. The realization of activities</b> In-class learning			
<b>Number of hours</b> lecture 30 h			
<b>The academic cycle</b> 2019/2020 winter semester			
<b>Type of course</b> obligatory		<b>Language of instruction</b> Polish	
<b>Teaching methods</b> Lectures including multimodal presentations Problem lecture		<b>Form and method of assessment and basic criteria for evaluation or examination requirements</b>	
		<b>A. Final evaluation, in accordance with the UG study regulations</b> Course completion (with a grade)	
		<b>B. Assessment methods</b> Oral assesment	
		<b>C. The basic criteria for evaluation or exam requirements</b>  • Positive assessment of oral credit according to criteria in accordance with the University of Gdansk Studies Regulations	
<b>Required courses and introductory requirements</b> <b>a. Formal requirements</b> none <b>b. Prerequisites</b> General and organic chemistry			
<b>Aims of education</b> -To familiarize students with the mechanisms of degradation of pollutants in selected advanced oxidation processes • To familiarize students with the selected devices used for the treatment of liquid and gas streams by AOP			

## Course contents

### A. Lecture topics:

Characterization and classification of advanced oxidation processes (AOP). The mechanism of oxidation of pollutants in the method of wet air oxidation and supercritical oxidation. Characteristics of chemical, photochemical and electrochemical processes for removing impurities from water, soil and air. Production and application of modern materials with catalytic properties in AOP methods. Application of nanostructures in AOP methods. The use of ozonation for disinfection, removal of organic compounds from the water phase and for deodorization of air streams.

## Bibliography of literature

### A. Literature required to pass the course

#### A. Literatura wymagana do ostatecznego zaliczenia zajęć (zdania egzaminu):

##### A.1. wykorzystywana podczas zajęć

1. Barbusiński, Zaawansowane utlenianie ścieków przemysłowych, Politechnika Śląska, 2013r.
2. Burczyk B. Zielona Chemia, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław 2006
3. Lewandowski W.M. Proekologiczne źródła energii odnawialnej, WNT W-wa 2001
4. Zarzycki R., Zaawansowane metody utleniania, Politechnika Wroclawska, Wrocław 2002.

##### A.2. studiowana samodzielnie przez studenta

Materials prepared by the teacher

### B. Extracurricular readings