załącznik do Regulaminu programu „visiting profesor”

Osoba zgłaszająca z PW	
Tytuł i stopień naukowy	**dr hab. inż. prof. uczelni**
Imię i nazwisko	Marlena Piekut
Wydział	Kolegium Nauk Ekonomicznych i Społecznych
Mail w domenie PW	Marlena.Piekut@pw.edu.pl
Telefon kontaktowy	

Propozycja osoby zgłaszanej jako visiting professor	
Tytuł i stopień naukowy	Professor Dr
Imię i nazwisko	Marina Valentukeviciene
Dokładna afiliacja	Professor and Senior Researcher at Environmental Engineering Faculty, Vilnius Gediminas Technical University, Lithuania
Mail kontaktowy	marina.valentukeviciene@vilniustech.lt
Opis osiągnięć (1/2-1 strony)	25 years’ experience in various activities of novel design and engineering. Specifically, experience in Eco-design development and implementation including analyses for market introduction; high-tech innovation distribution systems, as well as equipment layout for various types of industrial facilities. Consultant and/ or evaluator interface for installation of novel technological devices, innovative Eco-products, energy control monitoring systems (A++, Zero-Carbon etc.). Vice – Chair of European Commission experts for Horizon project proposal evaluation. Visiting Professor (2024 academic year) at Warsaw University of Life Sciences. Leading expert at Lithuanian Scientific Council (2017-till now). Supervising European Environmental Projects and Students research activities, lecturing at Environmental Engineering Faculty, all related activities in ecological projects (field trips, data collecting, evaluating, reporting and publications writing); Innovative Study Programme Development for Bachelors and Master Students; Temp Head of Department 2005; Vice Head of Strategic Research Department 2007-2009; WP Leader of MAPO FP6 Project. International projects in Environmental and Social sectors with European Construction Industry Federation (FIEC); from 2016.11 expert position, responsible for the educational programme development and improvement for the project “Developing Apprenticeship: In – Company Trainer Training and Apprenticeship Promotion”. Professional communication skills gained through my experience as lecturer at different academic and industrial sectors and as key speaker at different International Conferences and Workshops (Sweden, Poland, Norway, Czech Republic, Belarus, Belgium, France, Turkey, and Italy).

Code of the course	4606-VP-ES-00028	Name of the course	Polish	Projektowanie ekologiczne
			English	Ecological Design
Type of the course	Specialty subject			
Course coordinator	Marina Valentukeviciene	Course teacher	Marina Valentukeviciene	
Implementing unit	Kolegium Nauk Ekonomicznych i Społecznych	Scientific discipline / disciplines*	environmental engineering, mining and energy	
Level of education	Doctoral studies	Semester	15.10.2025-15.12.2025 (online)	

Language of the course	English				
Type of assessment	exam	Number of hours in a semester	60	ECTS credits	5
Minimum number of participants	10	Maximum number of participants	40	Available for students (BSc, MSc)	Yes

Type of classes		Lecture	Auditory classes	Project classes	Laboratory	Seminar
Number of hours	in a week					
	in a semester	30	15	15	no	

1. Prerequisites

none

2. Course objectives

Learn about the life cycle assessment. To understand why it is necessary for the product life cycle assessment. Know what kind of evaluation methodologies and valuation models can be used to analyze systems and models of development schemes to carry out the evaluation of results. Having acquired knowledge and practical skills to be able to independently perform tasks.

To deepen and to improve knowledge about special purpose eco-products, its research and evaluation. To understand of modern eco-products industry technologies evaluation methods. To learn analyzing, planning, modeling and evaluating of global, regional and local purpose eco-products. To obtain scientific research skills, applying the requirements of Ecodesign Directive. Study includes knowledge about the life cycle assessment, the legislative history, its evolution. It sets out a life cycle assessment objectives and scope. Discusses the life cycle stages of the evaluation and the methods used, the analysis of the different economic sectors in the components and their relationships. Practical exercises, familiarization with the energy and mass balance and the adaptation of the life cycle assessment. Life cycle assessment of risk indicators for the assessment and interpretation of results. Discusses the system dynamic model and its application to the life cycle assessment.
Students of the ecological design lectures examine how the current editions of the legislation governing ecological design are applied to organic products produced in the EU and other countries. Teamwork is aimed at creating and presenting an ecological product. The application of exemplary experience is aimed at possible improvement methods, processes, technologies on the market. Interdisciplinarity skills are developed in the process of ecological product evaluation and development, seeking to improve the prototypes obtained in the process of ecological design.

3. Course content (separate for each type of classes)

Lecture

1. *The concept of life cycle assessment.*
2. *The methodology of life cycle asssesment.*
3. *Life cycle impact assessment and impact categories.*
4. *Environmental Impact category*
5. *LCA interpretation and reporting.*
6. *LCA models*
7. *Environmental labeling*
8. *Needs evaluation of ecodesign and ecoproduct for the Market*
9. *Advanced technologies of ecological product creating*
10. *Experimental and virtual modeling of ecological product*
11. *Industrial technologies of ecological product for different objects*
12. *Ecodesign, introduction on market continually changing environment*
13. *Integrated evaluation of ecodesign system*

Auditory classes

Proszę uzupełnić

Project classes

Proszę uzupełnić

4. Learning outcomes			
Type of learning outcomes	Learning outcomes description	Reference to the learning outcomes of the WUT DS	Learning outcomes verification methods*
Knowledge			
K01	Knowledge of product life cycle, material and energy balance, sustainable development of environment, systems and principles of environmental management.	SD_W3	Exam, project presentation
K02	Ability to identify, find and evaluate the data necessary for engineering managerial work using databases and other sources of information.	SD_W5	Exam, project presentation
K03	*Ability to apply their knowledge and understanding, plan environmental decisionmaking, taking into account the technical, social, health, safety, environmental, commercial and other requirements.*	SD_W4	Exam, project presentation
Skills			
S01	*The student will be able to apply the results of scientific research to the analysis of risks, magnitude and control mechanisms of environmental pollution and the principles of environmental policy making.*	SD_U3	Exam, project presentation
S02	*The student will be able to apply the acquired engineering knowledge and scientific understanding to solve atypical environmental problems, including those related to other fields of science and engineering.*	SD_U2	Exam, project presentation
Social competences			
SC01	*The student will be able to apply modern methods in practical activities requiring innovation and integration of knowledge, to determine the level of harmfulness of environmental pollution and to select engineering measures to reduce it, to plan and implement effective environmental protection methods, to develop facilities for this purpose and to promote environmental protection.*	SD_K2	Project presentation

*Allowed learning outcomes verification methods: exam; oral exam; oral test; project evaluation; report evaluation; presentation evaluation; active participation during classes; homework; tests

5. Assessment criteria
Exam and Project Presentation

6. Literature
Primary references:
Rodrigues, Vinicius P.; Pigosso, Daniela C. A.; McAloone, Tim C. Review of ecodesign methods and tools. Barriers and strategies for an effective implementation in industrial companies. https://apps.webofknowledge.com
Valentukevičienė M.; Valatka V.. An interdisciplinary learning approach to ecological business: using examples of best practice. Management: Journal of contemporary management issues. Split: University Split. ISSN 1331-0194. vol. 25 (2020), p. 131-142.https://apps.webofknowledge.com
Dalhammar, Carl. Industry attitudes towards ecodesign standards for improved resource efficiency. https://apps.webofknowledge.com
di Sorrentino, Eugenia Polizzi; Woelbert, Eva; Sala, Serenella. Consumers and their behavior: state of the art in behavioral science supporting use phase modeling in LCA and ecodesign. https://apps.webofknowledge.com
Pigosso, D. C. A.; McAloone, T. C.; Rozenfeld, H. Characterization of the State-of-the-art and Identification of Main Trends for Ecodesign Tools and Methods: Classifying Three Decades of Research and Implementation. https://researchgate.net

Secondary references:

Brones, Fabien; de Carvalho, Marly Monteiro. From 50 to 1: integrating literature toward a systemic ecodesign model. https://apps.webofknowledge.com
MacDonald, Erin F.; She, Jinjuan. Seven cognitive concepts for successful eco-design. https://apps.webofknowledge.com
Lewandowska, Anna; Matuszak-Flejszman, Alina. Eco-design as a normative element of Environmental Management Systems-the context of the revised ISO 14001:2015. https://researchgate.net
Brones, Fabien; de Carvalho, Manly Monteiro; Zancul, Eduardo de Senzi. Ecodesign in project management: a missing link for the integration of sustainability in product development. https://apps.webofknowledge.com
Valentukevičienė, Marina; Žurauskienė, Ramunė. A case study "Eco-studio" about learning approach in sustainable development.
M. A. Curran (2012). Life Cycle Assessment Handbook: A Guide for Environmentally Sustainable Products
R. Schenck, P. White (2014). Environmental Life Cycle Assessment: Measuring the environmental performance of products

7. PhD student's workload necessary to achieve the learning outcomes**		
No.	Description	Number of hours
1	Hours of scheduled instruction given by the academic teacher in the classroom	60
2	Hours of consultations with the academic teacher, exams, tests, etc.	20
3	Amount of time devoted to the preparation for classes, preparation of presentations, reports, projects, homework	30
4	Amount of time devoted to the preparation for exams, test, assessments	30
	Total number of hours	140
	ECTS credits	5

** 1 ECTS = 25-30 hours of the PhD students work (2 ECTS = 60 hours; 4 ECTS = 110 hours, etc.)

8. Additional information	
Number of ECTS credits for classes requiring direct participation of academic teachers	3ECTS
Number of ECTS credits earned by a student in a practical course	2 ECTS