

Course Catalogue

Ukrainian-German Teaching Week

28 September – 5 October 2024

Digital Technology and Management

Department of Industrial Engineering and Healthcare



The project is implementing with the support of the DAAD as the part of the «Ukraine digital: Ensuring academic success in times of crisis» initiative funded by the Federal Ministry of Education and Research (FMBF)

About

Ukrainian-German Teaching Week took place from 28 September to 5 October as a part of the DILLUGIS 24 (Digital Labs & Lectures for Ukrainian, German & International Students) project.

Professors from 3 Ukrainian universities NTUU "Ihor Sikorsky Kyiv Polytechnic Institute", NU "Zaporizhzhia Polytechnic" and Kyiv National University of Construction and Architecture teach their courses for OTH Amberg-Weiden and Ukrainian students in online format.

Within the Ukrainian-German Teaching Week the following courses will be presented:

- *Innovation and Technology Lifecycle Management* by As. Prof. PhD. Natalia Skorobogatova, Department of International Economics, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"
- *Integrated Approaches to Sustainable Development* by Prof. Dr. Nadiia Shmygol, Management Department, National University "Zaporizhzhia Polytechnic", Warsaw University of Technology
- *Communication in IT projects* by Prof. Dr. Eng. Sc. Olena Verenysh, Project Management Department, Kyiv National University of Construction and Architecture

Ukrainian-German Teaching Week 2023 facts: 6 Courses, 39 OTH students, 108 Ukrainian students took part online and offline.

More information: www.oth-aw.de/hochschule/aktuelles/news/ukrainian-german-teaching-week-an-oth-amberg-weiden/

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Innovation and Technology Lifecycle Management



Natalia Skorobogatova,

Ph.D. in Economics, As. Professor, Department of International Economics, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute".

Author of over 250 scientific and practical publications in the field of economics, management and innovations. Team member in international projects "NTNU-KPI Collaboration within Industry 4.0 Education" (Norwegian University of Science and Technology and National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"); Sub-grant Agreement between the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" and the Project Consortium Boosting digital innovation in Europe (BOWI) – "BOWI Widening Call for Developing Hubs"; teaching experience for foreign students at WSB University (Poland), Norwegian University of Science and Technology (Norway), Igor Sikorsky KPI (Ukraine); researcher at World Data Centre for Geoinformatics and Sustainable Development and others.

Classification	Module ID	Kind of Module	Number of Credits (ECTS)
		Mandatory	5

Location	Language	Duration of Module	Frequency of Module	Max. Number of Participants
Online	English	8 days	28 September – 5 October	60
Module Convenor			Professor / Lecturer	
As. Prof. Dr. Natalia Skorobogatova			As. Prof. Dr. Natalia Skorobogatova	
Prerequisites				
Students must know the basics of economics, management Formal application/registration via the DILLUGIS website until August 15th 2023: https://www.oth-aw.de/studium/studienangebote/studiengaenge/bachelor/digital-technology-management/dillugis-project/#ukrainian-german-teaching-week-2023				
Usability		Teaching Methods		Workload
This course may be taken instead of the semester-long course with the same title. The module is part of the module group Digital Technology of the Digital Technology and Management Bachelor's degree program.		Lecture; group discussion; presentation.		Contact time: 60 h Self-study: 60 h Module work preparation: 30 h Total effort: 150 h

Learning Outcomes

Understanding innovation and innovative technologies, identifying the stages of the innovation life cycle, the ecosystem approach to the creation and implementation of innovative technologies, methods for assessing the life cycle of technology, building a product value chain based on the principles of the circular economy, assessing and managing the product life cycle in the context of sustainable development, attracting investment in innovation and technology based on a balanced assessment.

After successful completion of the module, students will have acquired the following professional, methodological and personal skills and competencies:

Professional Skills:

- Students can critically evaluate information about innovations and technologies and predict their life cycle.
- Apply innovation management methods to improve the effectiveness of management decisions from the perspective of potential stakeholders.
- Evaluate a product's value chain in relation to achieving sustainable development goals.
- Design the product life cycle according to the circular economy principles.
- Make an integrated assessment of the investment attractiveness of innovative technology based on a multi-criteria assessment methodology.

Methodological Skills:

- Students can conduct independent research and gather relevant quantitative and qualitative characteristics of projects from a variety of sources.
- They can analyse technical, economic, social, and environmental data using appropriate statistical and computational methods.
- They can improve sustainable technology life-cycle chains in accordance with global principles of sustainable development.

Personal Skills (Social Competence and Self-competence):

- Students can collaborate effectively in teams, taking into account different points of view and contributing constructively to group decisions.
- Students can adapt to new challenges and changing environments with resilience and flexibility in problem solving.

Course Content

The course provides a comprehensive study of the management system of the life cycle of innovations and technologies, including basic approaches to determining the stages and components of the life cycle based on the principles of a circular economy; assessing the added value of the product created, taking into account the principles of sustainable development; determining the effectiveness of the technology for all stakeholders at the micro, mega, macro and international levels. The course will also study methods for the comprehensive assessment of innovative technologies in order to attract investment, taking into account the balance between economic, social, environmental and

innovative aspects. The analysis of practical cases will make it possible to consolidate the theoretical knowledge acquired and to improve practical experience in the search and analysis of the necessary data, teamwork in the development of management decisions.

Teaching Material / Reading

The required textbooks for the course are

1. The Management of Technological Innovation. Strategy and Practice / M. Dodgson, D. Gann, A. Salter, Oxford University Press, 2008.
2. Beck D. F. Technology Development Life Cycle Processes. Sandia National Laboratories, 2013.
3. Trott P. Innovation Management and New Product Development. 6th ed., Pearson Education Limited, 2017.
4. Schilling M.A. Strategic management of technological innovation. 4th ed., New York University, 2013.
5. Dhingra T., Damodaran A., Tripathi R., Kumar V. Strategic Management of Technology and Innovation. UPES, 2018.

Internationality (content-related)

This course is a part of the DILLUGIS (Digital Labs & Lectures for Ukrainian, German & International Students) project and implemented with the support of the DAAD as the part of the «Ukraine digital: Ensuring academic success in times of crisis» initiative funded by the Federal Ministry of Education and Research (FMBF)

Method of Assessment (if applicable, notes on multiple choice as form of examination - APO §9a)

Form of Examination *1)	Type/Scope incl. Weighting *2)	Learning Objectives/Competencies to be Assessed
Module Work	Details will be provided in the beginning of the teaching week	In these types of work, all of the above-mentioned competencies are tested.

*1) Please refer to the applicable overview of the forms of examination at the OTH Amberg-Weiden

*2) Please provide additional information on the weighting (in % share) and, if applicable, explain the bonus system.

Integrated Approaches to Sustainable Development



Nadiia Shmygol,

Doctor of science, professor, Management Department, National University "Zaporizhzhia Polytechnic", Warsaw University of Technology.

Author of over 250 scientific and practical publications in the field of economics and management: Since March 2019 Head of South region Department of project UNIDO Resource Efficient and Cleaner Production Centre, team member in projects: "Circular Economy and New Growth Opportunities" component within the framework of the "European Union for Environment" (EU4Environment) Action for Eastern Partnership countries, Global Eco-Industrial Parks Programme (GEIPP) is implemented by UNIDO in countries with transition economies, Greening Economies in the Eastern Neighbourhood (EaP GREEN), Involvement of a Public Asset in Municipal Planning" and others.

Classification	Module ID	Kind of Module	Number of Credits (ECTS)
		Elective	5

Location	Language	Duration of Module	Frequency of Module	Max. Number of Participants
Online	English	8 days	28 September – 5 October	60
Module Convenor			Professor / Lecturer	
Prof. Nadiia Shmygol			Prof. Nadiia Shmygol	
Prerequisites*				
Students must know higher mathematics, the basics of accounting				
* Note: Please also note the prerequisites according to the examination regulations in the respective valid SPO version.				
Usability		Teaching Methods		Workload
This module is one option for the Basic Elective „Ukrainian-German teaching week" in the Bachelor degree program Digital Technology and Management		Lecture; group discussion; presentation.		Contact time: 60 h Self-study: 60 h Module work preparation: 30 h Total effort: 150 h

Learning Outcomes

Understanding globalization and financial challenges, analysing financial crises, studying the foreign exchange market and international capital markets, integrating sustainability into international finance, and evaluating foreign investment projects.

After successful completion of the module, students will have acquired the following professional, methodological and personal skills and competencies:

Professional Skills:

- Students will critically evaluate financial information and make informed decisions integrating sustainability principles.
- They will analyze sustainable marketing strategies and their effectiveness in modern business contexts.
- Students will develop strategies for sustainable management that promote economic growth and social responsibility.
- They will formulate and implement sustainable strategies within organizations, aligning with global sustainability frameworks..

Methodological Skills:

- Students will conduct independent research to gather and analyze diverse data sources relevant to sustainable development.
- They will apply statistical and computational methods to analyze financial and sustainability data.
- Students will develop financial strategies and plans that integrate sustainability criteria and align with global frameworks.
- They will formulate comprehensive sustainability strategies and develop implementation plans based on thorough analysis and stakeholder engagement.

Personal Skills (Social Competence and Self-competence):

- Students will collaborate effectively in diverse teams, respecting different perspectives and contributing constructively to group dynamics.
- They will demonstrate adaptability and resilience in addressing challenges related to sustainable development and management.
- Students will communicate effectively and advocate for sustainable practices within organizations and communities.
- They will demonstrate ethical leadership and promote social responsibility in their professional roles.

Course Content

Integrated Approaches to Sustainable Development explores the multifaceted dimensions of sustainable development across finance, marketing, management, and organizational strategy. Students delve into foundational aspects such as defining sustainable development, tracing its evolution, and understanding global frameworks like the UN Sustainable Development Goals. They analyze the integration of sustainability into international finance, focusing on sustainable investment criteria and financial decision-making processes. Principles of sustainable marketing are examined in the context of enhancing business sustainability and corporate social responsibility. The course also covers strategies for sustainable management aimed at fostering economic growth while promoting environmental and social responsibility. Practical aspects include formulating and implementing sustainable strategies within organizations, aligning with global sustainability frameworks, and preparing students to critically evaluate and apply these principles in real-world scenarios.

Teaching Material / Reading		
The required textbooks for the course are		
<ol style="list-style-type: none"> 1. Introduction to Global Sustainable Management Colin Combe, SAGE Publications, 2022, pages: 321, ISBN: 978-1-5297-8819-8 2. Schoenmaker, Dirk and Willem Schramade (2019), Principles of Sustainable Finance, Oxford University Press, Oxford 3. Hoffman, J. Andrew. From Heresy to Dogma: An Institutional History of Corporate Environmentalism. Stanford, California: Stanford University Press., 2001. https://www.anaheim.edu/what-is-sustainable-management.html 		
Internationality (content-related)		
This course is a part of the DILLUGIS (Digital Labs & Lectures for Ukrainian, German & International Students) project and implemented with the support of the DAAD as the part of the «Ukraine digital: Ensuring academic success in times of crisis» initiative funded by the Federal Ministry of Education and Research (FMBF)		
Method of Assessment (if applicable, notes on multiple choice as form of examination - APO §9a)		
Form of Examination *1)	Type/Scope incl. Weighting *2)	Learning Objectives/Competencies to be Assessed
Learning portfolio	Written: Reports on lab works (70 %), Test (20%) Orally: Presentation (10 %)	In these types of work, all of the above-mentioned competencies are tested.

*1) Please refer to the applicable overview of the forms of examination at the OTH Amberg-Weiden

*2) Please provide additional information on the weighting (in % share) and, if applicable, explain the bonus system.

Communication in IT projects



Prof. OLENA VERENYKH,

Doctor of Engineering Science, specialty: Project and Program Management; Professor of the Project Management Department of the Kyiv National University of Construction and Architecture (KNUCA). Author of over 100 scientific and methodological works. Reviewer of scientific articles and an active participant in international scientific-practical conferences. The supervisor of bachelor's and master's theses at KNUCA and at Dortmund University of Applied Sciences and Arts, Dortmund, Germany (on a voluntary basis). Chair and member of ad hoc specialized academic councils; included in the ranking of the best scientific and pedagogical staff of KNUCA. Has experience in implementing Ukrainian and international projects, including cooperation with the European Union (ERASMUS), German Academic Exchange Service (DAAD) (EuroPIM Virtual Master School Ukraine) and the World Bank for Reconstruction and Development, serving as a project manager.

Classification	Module ID	Kind of Module	Number of Credits (ECTS)
		Elective	5

Location	Language	Duration of Module	Frequency of Module	Max. Number of Participants
Online	English	8 days	28 September – 5 October	20
Module Convenor			Professor / Lecturer	
Prof. Olena Verenykh			Prof. Olena Verenykh	
Prerequisites*				
The students should have technological knowledge on technology (general), basic knowledge on office applications, and main principles of business communicative, Intercultural Communication, Social Competence, Psychology (are recommended)				
Usability		Teaching Methods		Workload
This module is one option for the Basic Elective „Ukrainian-German teaching week” in the Bachelor degree program Digital Technology and Management		Lecture; group discussion; presentation, case-study, flipped class.		Contact time: 60 h Self-study: 60 h Test preparation: 30 h Total effort: 150 h

Learning Outcomes

Formation of the set competencies in communication that are based on the understanding of the main principles of constructive communication and constructive confrontation, building correct argumentation, and visualization through a presentation

After successful completion of the module, students will have acquired the following professional, methodological and personal skills and competencies:

Professional Skills:

- Student can identify the problem in communication.
- Student can implement the principles of constructive communication.
- Student can find a way to solve the communication problem.
- Student can plan the IT project argumentation.
- Student can design a presentation that will be in the stakeholder's mind.

Methodological Skills:

- Student can defend a point of view in a discussion.
- Student can find arguments for supporting ideas.
- Student can understand the reason for the problem in communication and find a short way to solve it.

Personal Skills (Social Competence and Self-competence):

- Student can develop competencies in using constructive communication to convince anyone of anything and creating a "healthy" communication environment in IT business and common life.

Course Content

This course provides an introduction to the communication field. Soft skills and, especially, communication, are important for the initialization and implementation of any IT project. Misunderstanding that is based on incorrect argumentation can lead to unsuccessful IT project implementation or inadequate supporting ideas for IT projects from the top management or investors. The course focuses on the main points for communication between team members and with stakeholders. The skills can be used in everyday life too. The main topics of lectures are constructive communication, the constructive resolution of problems algorithm, the main principles of argument preparation, the argumentation formula, and the main principles of presentation preparation that your presentation leaves in the stakeholder's mind. The learning process is based on discussions where students can practice argumentation, case studies where students can find communication

problems and try to find approaches for solving them, and oral presentations where students practice presenting the ideas with a presentation supporting them. Communication is the key to change in life and opening new professional possibilities.

Teaching Material / Reading

1. The 13 key Grove Quotes from his book High Output Management - <https://getlighthouse.com/blog/andy-grove-quotes-leadership-high-output-management/>
2. Heidi Burgess and Guy Burgess, "Constructive Confrontation: A Transformative Approach to Intractable Conflicts," Mediation Quarterly. 13:4 (Summer 1996), pp. 305-322.
3. Andrew Grove High Output Management — Random House, 1995. — ISBN 0679762884.
4. Constructive communication - http://wiki.doing-projects.org/index.php/Constructive_communication#Focus_on_the_Future

Internationality (content-related)

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Method of Assessment (if applicable, notes on multiple choice as form of examination - APO §9a)

Form of Examination *1)	Type/Scope incl. Weighting *2)	Learning Objectives/Competencies to be Assessed
Learning portfolio	Written: Presentation (20 %), Test: (20%) Orally: Discussion (30 %), case-study (30%)	In these types of work, all of the above-mentioned competencies are tested.

*1) Please refer to the applicable overview of the forms of examination at the OTH Amberg-Weiden

*2) Please provide additional information on the weighting (in % share) and, if applicable, explain the bonus system.