SCIENTIFIC PUBLICATIONS

BSA BALTIJAS STARPTAUTISKĀ AKADĒMIJA

Scientific Journals

НАУКА ТА МЕТРИКА

№ SU 1187 / 28.08.2024

CERTIFICATE

is presented to

Mykola Kundenko

for the successful completion of the international internship program
for qualification improvement on the topic:

"APPLICATION OF OPEN DATA IN SCIENTIFIC DEVELOPMENTS: METHODS AND PRACTICAL RECOMMENDATIONS"

The training consisted of lectures and workshops
(Total load: 60 class hours and 120 hours of distance learning)
Awarded 6 (six) ECTS credits

VLADISLAV VOLKOV

Vice Rector on science at Baltic
International Academy

ANNA DZHYM

Director of Ltd. "Scientific Journals"

ALINA POMIN

Director of Ltd. "Scientific Publications
Ukraine"

PAVLO KOLOMIETS

Specialist of the Scientific and Educational
Center of "Scientific Publications" company

SCIENTIFIC PUBLICATIONS

BALTIJAS STARPTAUTISKĀ AKADĒMIJA

Scientific Journals

НАУКА ТА МЕТРИКА

№ SU 1188 / 28.08.2024

CERTIFICATE

is presented to

Iegorova Olga

for the successful completion of the international internship program for qualification improvement on the topic:

"APPLICATION OF OPEN DATA IN SCIENTIFIC DEVELOPMENTS: METHODS AND PRACTICAL RECOMMENDATIONS"

The training consisted of lectures and workshops
(Total load: 60 class hours and 120 hours of distance learning)
Awarded 6 (six) ECTS credits

VLADISLAV VOLKOV

Vice Rector on science at Baltic International Academy

ANNA DZHYM

Director of Ltd. "Scientific Journals"

ALINA POMIN

Director of Ltd. "Scientific Publications Ukraine"

PAVLO KOLOMIETS

Specialist of the Scientific and Educational Center of "Scientific Publications" company

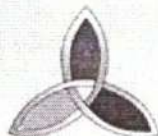**ZUSTRICZ**

UNIWERSYTET
JAGIELLONSKI
W KRAKOWIE

Sobornist

CERTIFICATE

This certifies that

Voronkin Andrii

has passed the international internship under the program

FUNDRAISING AND ORGANIZATION OF PROJECT ACTIVITIES IN EDUCATIONAL ESTABLISHMENTS: EUROPEAN EXPERIENCE

and has developed the educational project on the topic

University Business Hub: Partnership and Technology for Student Startups

The certificate has a supplement

Amount: 180 hours / 6 ECTS credits
Internship period: from November 2 to December 8, 2024

Learning result: development of professional competencies
Series and registration number: SZFL-003658

Co-founder of Zustricz Foundation, management expert
Oleksandra Zapolska
(Poland)

Head of Department of UJ, Prof., Dr. hab.,
Alicja Nowak
(Poland)

Internship program leader Dr. hab., MBA,
Walery Okulich-Kozaryn
(Poland)

Chairman of NGO Sobornist, Prof., Doctor of Philosophy
Mykola Zhurba
(Ukraine)

Director of LRIPPE, Associate Professor, PhD
Iryna Tsymbal
(Ukraine)

ZUSTRICZ
FUNDACIA
KRS: 0000611051
REGON: 364184096
NIP: 6762505411
e-mail: zustricz@gmail.com

KIEROWNIK
Zakładu Studiów Polsko-Ukraińskich
Wydziału Studiów Międzynarodowych i Politycznych UJ
dr hab. Alicja Nowak, prof. UJ

Profesor WSB-NLU
w Nowym Saczu
Dr hab. Walery Okulicz-Kozaryn
Walery Okulicz-Kozaryn

2024

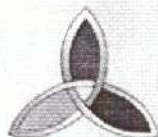**Zustricz Foundation**
Department of Polish-Ukrainian Studies of Jagiellonian University in Krakow
Career Development Center of NGO Sobornist
Luhansk Regional Institute of Postgraduate Pedagogical Education

CERTIFICATE

This certifies that

Kariev Artem

has passed the international internship under the program

FUNDRAISING AND ORGANIZATION OF PROJECT ACTIVITIES IN EDUCATIONAL ESTABLISHMENTS: EUROPEAN EXPERIENCE

and has developed the educational project on the topic

University Business Hub: Partnership and Technology for Student Startups

Amount: 180 hours / 6 ECTS credits
Internship period: from November 2 to December 8, 2024

Learning result: development of professional competencies
Series and registration number: SZFL-003464

Co-founder of Zustricz Foundation, management expert	Head of Department of UJ, Prof., Dr. hab.,	Internship program leader Dr. hab., MBA,	Chairman of NGO Sobornist, Prof., Doctor of Philosophy	Director of LRIPPE, Associate Professor, PhD
Oleksandra Zapolska	**Alicja Nowak**	**Walery Okulich-Kozaryn**	**Mykola Zhurba**	**Iryna Tsymbal**
(Poland)	(Poland)	(Poland)	(Ukraine)	(Ukraine)

KIEROWNIK
Zakładu Studiów Polsko-Ukraińskich
Wydział Studiów Międzynarodowych i Politycznych UJ

dr hab. Alicja Nowak, prof. UJ

Profesor WSB-NLU
w Nowym Sączu
Dr hab. Walery Okulicz-Kozaryn
Walery Okulicz-Kozaryn

ZUSTRICZ
FUNDACJA
KRS: 0000611051
REGON: 364184096
NIP: 6762505411
e-mail: zustricz@gmail.com

2024

Zustricz Foundation
Department of Polish-Ukrainian Studies of Jagiellonian University in Krakow
Career Development Center of NGO Sobornist
Luhansk Regional Institute of Postgraduate Pedagogical Education

ZUSTRICZ

UNIWERSYTET
JAGIELLOŃSKI
W KRAKOWIE

Sobornist

CERTIFICATE

This certifies that

Kopylov Serhii

The certificate has
a supplement

has passed the international internship under the program

FUNDRAISING AND ORGANIZATION OF PROJECT ACTIVITIES IN EDUCATIONAL ESTABLISHMENTS: EUROPEAN EXPERIENCE

and has developed the educational project on the topic

University Business Hub: Partnership and Technology for Student Startups

Amount: 180 hours / 6 ECTS credits
Internship period: from November 2 to December 8, 2024

Learning result: development of professional competencies
Series and registration number: SZFL-003483

Co-founder of Zustricz Foundation,
management expert
Oleksandra Zapolska
(Poland)

Head of Department of UJ,
Prof., Dr. hab.,
Alicja Nowak
(Poland)

Internship program leader
Dr. hab., MBA,
Walery Okulich-Kozaryn
(Poland)

Chairman of NGO Sobornist,
Prof., Doctor of Philosophy
Mykola Zhurba
(Ukraine)

Director of LRIPPE,
Associate Professor, PhD
Iryna Tsymbal
(Ukraine)

KIEROWNIK
Zakładu Studiów Polsko-Ukraińskich
Wydział, Studiów Miedzynarodowych i Politycznych UJ

dr hab. Alicja Nowak, prof. UJ

Profesor WSB-NLU
w Nowym Sączu
Dr hab. Walery Okulicz-Kozaryn
Walery Okulicz-Kozaryn

ZUSTRICZ
FUNDACJA
KRS: 0000611051
REGON: 364184096
NIP: 6762505411
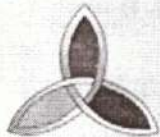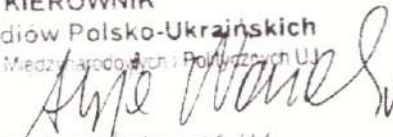e-mail: zustricz@gmail.com

2024

Zustricz Foundation
Department of Polish-Ukrainian Studies of Jagiellonian University in Krakow
Career Development Center of NGO Sobornist
Luhansk Regional Institute of Postgraduate Pedagogical Education

ZUSTRICZ

UNIWERSYTET
JAGIELLOŃSKI
W KRAKOWIE

Sobornist

CERTIFICATE

This certifies that

Lebedieva Kateryna

has passed the international internship under the program

FUNDRAISING AND ORGANIZATION OF PROJECT ACTIVITIES IN EDUCATIONAL ESTABLISHMENTS: EUROPEAN EXPERIENCE

and has developed the educational project on the topic

University Business Hub: Partnership and Technology for Student Startups

Amount: 180 hours / 6 ECTS credits
Internship period: from November 2 to December 8, 2024

Learning result: development of professional competencies
Series and registration number: SZFL-003518

| Co-founder of Zustricz Foundation, management expert **Oleksandra Zapolska** (Poland) | Head of Department of UJ, Prof., Dr. hab., **Alicja Nowak** (Poland) | Internship program leader Dr. hab., MBA, **Walery Okulich-Kozaryn** (Poland) | Chairman of NGO Sobornist, Prof., Doctor of Philosophy **Mykola Zhurba** (Ukraine) | Director of LRIPPE, Associate Professor, PhD **Iryna Tsymbal** (Ukraine) |

ZUSTRICZ
FUNDACIA
KRS: 0000611051
REGON: 364184096
NIP: 6762505411
e-mail: zustricz@gmail.com

KIEROWNIK
Zakładu Studiów Polsko-Ukraińskich
Wydziału Studiów Międzynarodowych i Politycznych UJ

dr hab. Alicja Nowak, prof. UJ

Profesor WSB-NLU
w Nowym Sączu
Dr hab. Walery Okulicz-Kozaryn
Walery Okulicz-Kozaryn

2024

SCIENTIFIC PUBLICATIONS

BALTIJAS STARPTAUTISKĀ AKADĒMIJA

SCIENTIFIC JOURNALS

НАУКА ТА МЕТРИКА

№ SU 1133 / 22.04.2024

CERTIFICATE

is presented to

Larysa Tiutiunyk

for the successful completion of the international internship program
for qualification improvement on the topic:

"CAREER DEVELOPMENT IN THE SCIENTIFIC FIELD: INTEGRATION OF GLOBAL RESEARCH METHODS AND INTERNATIONAL PARTNERSHIP"

The training consisted of lectures and workshops
(Total load: 60 class hours and 120 hours of distance learning)
Awarded 6 (six) ECTS credits

VLADISLAV VOLKOV
Vice Rector on science at Baltic
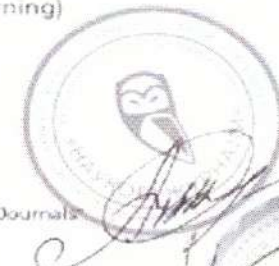International Academy

ANNA DZHYM
Director of Ltd. "Scientific Journals"

ALINA POMIN
Director of Ltd. "Scientific Publications
Ukraine"

PAVLO KOLOMIIETS
Specialist of the Scientific and Educational
Center of "Scientific Publications" company

Certificate

This is to certify that

Dr. Maryna IVANOVA, Ph.D.

has successfully completed the Program on

Online Seminar on "Industrial Technology Education" for Ukraine

from May 19, 2024 to November 24, 2024
organized by the Japan International Cooperation Agency
in collaboration with ESD Consortium under the International
Cooperation Program of the Government of Japan.

TANAKA Akihiko
President,
Japan International Cooperation Agency
Date: November 24, 2024

Certificate

This is to certify that

Dr. Yevheniia BASOVA, Ph.D.

has successfully completed the Program on

Online Seminar on "Industrial Technology Education" for Ukraine

from May 19, 2024 to November 24, 2024
organized by the Japan International Cooperation Agency
in collaboration with ESD Consortium under the International
Cooperation Program of the Government of Japan.

TANAKA Akihiko
President,
Japan International Cooperation Agency
Date: November 24, 2024

Joint Program for Virtual Mobility
Advanced Manufacturing: Innovations
in Materials and Technologies

www.iatdi.org

CERTIFICATE

is proudly presented to

Oleksandr Subbotin

who has successfully completed the **Joint Program for Virtual Mobility**
"Advanced Manufacturing: Innovations in Materials and Technologies",
between Sumy State University (Ukraine), Poznan University of Technology (Poland),
Technical University of Košice (Slovak Republic), and International Association for
Technological Development and Innovations (Ukraine)
from October 21, 2024 till December 13, 2024.

The Certificate is equal to 60 academic hours or 2.0 credits ECTS.
The Program is certified by the International Association for Technological Development
and Innovations.

Dr. **Nadiia KHARCHENKO**, Ph.D.,
Sumy State University,
Coordinator

Dr. **Yuliia DENYSENKO**, Ph.D.,
Poznan University of Technology,
Coordinator

Prof. **Michal HATALA**, Ph.D.,
Technical University of Kosice,
Coordinator

Date: December 20, 2024

PROGRAM CONTENT

Manufacturing: Fundamentals and Advanced Technologies	2
TIPS Methodology as a Tool for Finding Solutions to Technical Contradictions and Introducing Innovations	2
Cutting Force During Machining	2
ISO System for Tolerances and Fits	2
Thermal Phenomena in the Cutting Process	2
Modern Approaches to Predicting the Properties of Multicomponent Materials	2
Empowering Rehabilitation: Medical Knowledge Through 3D Manufacturing	2
3D Printing for Surgery Medicine	2
The Role of Engineers in Sustainable Development	2
Navigating Quality Management in Agile Manufacturing: Strategies for Effective Reporting	2
Advanced Polymer Materials in Additive Production for Bioengineering	2
Using Markov Chains in the Manufacturing Engineering	2
Tool Wear in Cutting Theory	2
Application of Artificial Intelligence in Manufacturing Processes	2
Simulation of Manufactiuring Systems	2
Self-Study	20
Student-Lecturer Scientific Discussions	8
Final Test	2
TOTAL (hours)	**60**

ADVISORY BOARD

Prof. Vitalii IVANOV,
Sumy State University, Ukraine
Dr. Justyna TROJANOWSKA,
Poznan University of Technology, Poland
Prof. Jan PITEL,
Technical University of Kosice, Slovak Republic

iATDi — Joint Program for Virtual Mobility **Advanced Manufacturing: Innovations in Materials and Technologies**

www.iatdi.org

CERTIFICATE

is proudly presented to

Oleh Volkov

who has successfully completed the **Joint Program for Virtual Mobility** **"Advanced Manufacturing: Innovations in Materials and Technologies"**, between Sumy State University (Ukraine), Poznan University of Technology (Poland), Technical University of Košice (Slovak Republic), and International Association for Technological Development and Innovations (Ukraine) from October 21, 2024 till December 13, 2024.

The Certificate is equal to 60 academic hours or 2.0 credits ECTS. The Program is certified by the International Association for Technological Development and Innovations.

Dr. **Nadiia KHARCHENKO**, Ph.D., Sumy State University, Coordinator

Dr. **Yuliia DENYSENKO**, Ph.D., Poznan University of Technology, Coordinator

Prof. **Michal HATALA**, Ph.D., Technical University of Kosice, Coordinator

Date: December 20, 2024

PROGRAM CONTENT

Manufacturing: Fundamentals and Advanced Technologies	2
TIPS Methodology as a Tool for Finding Solutions to Technical Contradictions and Introducing Innovations	2
Cutting Force During Machining	2
ISO System for Tolerances and Fits	2
Thermal Phenomena in the Cutting Process	2
Modern Approaches to Predicting the Properties of Multicomponent Materials	2
Empowering Rehabilitation: Medical Knowledge Through 3D Manufacturing	2
3D Printing for Surgery Medicine	2
The Role of Engineers in Sustainable Development	2
Navigating Quality Management in Agile Manufacturing: Strategies for Effective Reporting	2
Advanced Polymer Materials in Additive Production for Bioengineering	2
Using Markov Chains in the Manufacturing Engineering	2
Tool Wear in Cutting Theory	2
Application of Artificial Intelligence in Manufacturing Processes	2
Simulation of Manufacturing Systems	2
Self-Study	20
Student-Lecturer Scientific Discussions	8
Final Test	2
TOTAL (hours)	**60**

ADVISORY BOARD

Prof. Vitalii IVANOV, Sumy State University, Ukraine

Dr. Justyna TROJANOWSKA, Poznan University of Technology, Poland

Prof. Jan PITEL, Technical University of Kosice, Slovak Republic

Joint Program for Virtual Mobility
Advanced Manufacturing: Innovations in Materials and Technologies

www.iatdi.org

CERTIFICATE

is proudly presented to

Hanna Kniazieva

who has successfully completed the **Joint Program for Virtual Mobility**
"Advanced Manufacturing: Innovations in Materials and Technologies",
between Sumy State University (Ukraine), Poznan University of Technology (Poland),
Technical University of Košice (Slovak Republic), and International Association for
Technological Development and Innovations (Ukraine)
from October 21, 2024 till December 13, 2024.

The Certificate is equal to 60 academic hours or 2.0 credits ECTS.
The Program is certified by the International Association for Technological Development
and Innovations.

Dr. **Nadiia KHARCHENKO**, Ph.D.,
Sumy State University,
Coordinator

Dr. **Yuliia DENYSENKO**, Ph.D.,
Poznan University of Technology,
Coordinator

Prof. **Michal HATALA**, Ph.D.,
Technical University of Kosice,
Coordinator

Date: December 20, 2024

PROGRAM CONTENT

Manufacturing: Fundamentals and Advanced Technologies	2
TIPS Methodology as a Tool for Finding Solutions to Technical Contradictions and Introducing Innovations	2
Cutting Force During Machining	2
ISO System for Tolerances and Fits	2
Thermal Phenomena in the Cutting Process	2
Modern Approaches to Predicting the Properties of Multicomponent Materials	2
Empowering Rehabilitation: Medical Knowledge Through 3D Manufacturing	2
3D Printing for Surgery Medicine	2
The Role of Engineers in Sustainable Development	2
Navigating Quality Management in Agile Manufacturing: Strategies for Effective Reporting	2
Advanced Polymer Materials in Additive Production for Bioengineering	2
Using Markov Chains in the Manufacturing Engineering	2
Tool Wear in Cutting Theory	2
Application of Artificial Intelligence in Manufacturing Processes	2
Simulation of Manufacturing Systems	2
Self-Study	20
Student-Lecturer Scientific Discussions	8
Final Test	2
TOTAL (hours)	**60**

ADVISORY BOARD

Prof. Vitalii IVANOV,
Sumy State University, Ukraine
Dr. Justyna TROJANOWSKA,
Poznan University of Technology, Poland
Prof. Jan PITEL,
Technical University of Kosice, Slovak Republic

Joint Program for Virtual Mobility
Advanced Manufacturing: Innovations in Materials and Technologies

CERTIFICATE

is proudly presented to

Valeriia Subbotina

who has successfully completed the **Joint Program for Virtual Mobility**
"Advanced Manufacturing: Innovations in Materials and Technologies",
between Sumy State University (Ukraine), Poznan University of Technology (Poland),
Technical University of Košice (Slovak Republic), and International Association for
Technological Development and Innovations (Ukraine)
from October 21, 2024 till December 13, 2024.

The Certificate is equal to 60 academic hours or 2.0 credits ECTS.
The Program is certified by the International Association for Technological Development
and Innovations.

Dr. **Nadiia KHARCHENKO**, Ph.D.,
Sumy State University,
Coordinator

Dr. **Yuliia DENYSENKO**, Ph.D.,
Poznan University of Technology,
Coordinator

Prof. **Michal HATALA**, Ph.D.,
Technical University of Kosice,
Coordinator

Date: December 20, 2024

PROGRAM CONTENT

Manufacturing: Fundamentals and Advanced Technologies	2
TIPS Methodology as a Tool for Finding Solutions to Technical Contradictions and Introducing Innovations	2
Cutting Force During Machining	2
ISO System for Tolerances and Fits	2
Thermal Phenomena in the Cutting Process	2
Modern Approaches to Predicting the Properties of Multicomponent Materials	2
Empowering Rehabilitation: Medical Knowledge Through 3D Manufacturing	2
3D Printing for Surgery Medicine	2
The Role of Engineers in Sustainable Development	2
Navigating Quality Management in Agile Manufacturing: Strategies for Effective Reporting	2
Advanced Polymer Materials in Additive Production for Bioengineering	2
Using Markov Chains in the Manufacturing Engineering	2
Tool Wear in Cutting Theory	2
Application of Artificial Intelligence in Manufacturing Processes	2
Simulation of Manufactiuring Systems	2
Self-Study	20
Student-Lecturer Scientific Discussions	8
Final Test	2
TOTAL (hours)	**60**

ADVISORY BOARD

Prof. Vitalii IVANOV,
Sumy State University, Ukraine

Dr. Justyna TROJANOWSKA,
Poznan University of Technology, Poland

Prof. Jan PITEL,
Technical University of Kosice, Slovak Republic

Joint Program for Virtual Mobility
**Advanced Manufacturing: Innovations
in Materials and Technologies**

www.iatdi.org

CERTIFICATE

is proudly presented to

Serhii Kniaziev

who has successfully completed the **Joint Program for Virtual Mobility**
"Advanced Manufacturing: Innovations in Materials and Technologies",
between Sumy State University (Ukraine), Poznan University of Technology (Poland),
Technical University of Košice (Slovak Republic), and International Association for
Technological Development and Innovations (Ukraine)
from October 21, 2024 till December 13, 2024.

The Certificate is equal to 60 academic hours or 2.0 credits ECTS.
The Program is certified by the International Association for Technological Development
and Innovations.

Dr. **Nadiia KHARCHENKO**, Ph.D.,
Sumy State University,
Coordinator

Dr. **Yuliia DENYSENKO**, Ph.D.,
Poznan University of Technology,
Coordinator

Prof. **Michal HATALA**, Ph.D.,
Technical University of Kosice,
Coordinator

Date: December 20, 2024

PROGRAM CONTENT

Manufacturing: Fundamentals and Advanced Technologies	2
TIPS Methodology as a Tool for Finding Solutions to Technical Contradictions and Introducing Innovations	2
Cutting Force During Machining	2
ISO System for Tolerances and Fits	2
Thermal Phenomena in the Cutting Process	2
Modern Approaches to Predicting the Properties of Multicomponent Materials	2
Empowering Rehabilitation: Medical Knowledge Through 3D Manufacturing	2
3D Printing for Surgery Medicine	2
The Role of Engineers in Sustainable Development	2
Navigating Quality Management in Agile Manufacturing: Strategies for Effective Reporting	2
Advanced Polymer Materials in Additive Production for Bioengineering	2
Using Markov Chains in the Manufacturing Engineering	2
Tool Wear in Cutting Theory	2
Application of Artificial Intelligence in Manufacturing Processes	2
Simulation of Manufacturing Systems	2
Self-Study	20
Student-Lecturer Scientific Discussions	8
Final Test	2
TOTAL (hours)	**60**

ADVISORY BOARD

Prof. Vitalii IVANOV,
Sumy State University, Ukraine
Dr. Justyna TROJANOWSKA,
Poznan University of Technology, Poland
Prof. Jan PITEL,
Technical University of Kosice, Slovak Republic

IESF·IBR

ABOUT THE INTERNATIONAL SKILLS DEVELOPMENT (THE WEBINAR)

CERTIFICATE

CERTIFICATE OF PARTICIPATION THIS IS TO CERTIFY THAT

Nataliia Yakymenko-Tereshchenko

INTERNATIONAL SKILLS DEVELOPMENT
(Webinar) on the topic:

«ADULT EDUCATION: EXPERIENCE OF THE EUROPEAN UNION AND UKRAINE»
20 hours of practical sessions and 13 hours of self−study.

The skills improvement program (webinar) is made up of

1.5 ECTS credits (45 hours) including

12 hours of lectures,

in the following disciplines:
Economy of hotels and restaurants Organization of tourism Organization of restaurant economy

President IESF, doctor of law
Oleg Batiuk

PREZES ZARZĄDU
A. małek
dr inż. Arkadiusz Małek
Instytut Badawczo − Rozwojowy
Lubelskiego Parku
Naukowo Technologicznego Sp. z o.o.
ul. Dobrzańskiego 3, 20-262 Lublin
NIP: 9462650501, REGON: 360101179

11th − 20th of March, 2024, Lublin (Republic of Poland)

UNIVERSITATEA
TEHNICĂ
DIN CLUJ-NAPOCA

Facultatea de Inginerie

CERTIFICATE

this is to certify that
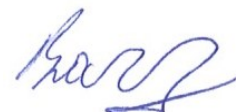
Yevheniia BASOVA

Candidate of Engineering Sciences, Associate Professor
Associate Professor at the Department of Technology of Mechanical Engineering and Metal-Cutting Machine Tools, National Technical University "Kharkiv Polytechnic Institute"

passed a scientific and pedagogical internship from April 08 to May 23, 2024, at the Department of Electrical Engineering, Electronic and Computers from
Technical University of Cluj-Napoca,
North University Center of Baia Mare,
in the amount of 6 credits (180 hours)

Internship Supervisor

Assoc. Prof. Eng. Cristian BARZ PhD

Cluj-Napoca 23.05.2024

Internship program

1	**Application of CAD and CAE systems for research and improvement of technical objects on the example of turbocharger** Investigation of ways to optimise the mixed flow rotor blade edge. Performing verification of A-type blade leading edge optimisation, present methods of leading edge improvement. Solutions of the averaged Navier-Stokes equations acting on the flow through the turbine type A to perform in the computer modelling system ANSYS CFX.15. Preparation of a scientific article.	45 hours
2	**Study of the principles of building PLM-systems in mechanical engineering** Application of a system approach to designing PLM-systems. Structure and capabilities of PLM systems. Typical architectures of PLM-systems, principles of their implementation. Methods of information resources of PLM-systems. Selection, combination and use of methods of information resources and models. Development of an educational PLM-system of threaded connections. Preparation of a scientific article.	45 hours
3	**Study of the principles of design and programming of mechatronic systems** Methods of reverse engineering in designing mechatronic systems, methods of measuring quantities in the operation of mechatronic devices, methods of analogue-digital signal conversion, standard microcontroller interfaces, basic algorithms of data processing. Application of CAD/CAE/CAM systems for the design and manufacture of portable metalworking systems. Application of machine vision technologies in robotics and quality control of machine-building products. Preparation for a report at a scientific conference.	45 hours
4	**Application of machine learning methods for solving problems of engineering mechanics** Review of packages for machine learning. Basic methods. Supervised machine learning methods. Data preprocessing methods and unsupervised machine learning methods. Methods for constructing features. Methods for assessing and improving the quality of models. Preparation for a report at a scientific conference.	45 hours

Total: 180 study/work hours (6 ECTS credits)

UNIVERSITATEA TEHNICĂ
DIN CLUJ-NAPOCA

Facultatea de Inginerie

CERTIFICATE

this is to certify that
Sergey Dobrotvorskiy

Doctor of Engineering Sciences, Professor

Professor of the Department of Technology of Mechanical Engineering and Metal-Cutting Machine Tools, National Technical University "Kharkiv Polytechnic Institute"

passed a scientific and pedagogical internship from April 08 to May 23, 2024, at the Department of Electrical Engineering, Electronic and Computers from
Technical University of Cluj-Napoca,
North University Center of Baia Mare,
in the amount of 6 credits (180 hours)

Internship Supervisor

Assoc. Prof. Eng. Cristian BARZ PhD

Cluj-Napoca 23.05.2024

Internship program

1	**Application of CAD and CAE systems for research and improvement of technical objects on the example of turbocharger** Investigation of ways to optimise the mixed flow rotor blade edge. Performing verification of A-type blade leading edge optimisation, present methods of leading edge improvement. Solutions of the averaged Navier-Stokes equations acting on the flow through the turbine type A to perform in the computer modelling system ANSYS CFX.15. Preparation of a scientific article.	45 hours
2	**Study of the principles of building PLM-systems in mechanical engineering** Application of a system approach to designing PLM-systems. Structure and capabilities of PLM systems. Typical architectures of PLM-systems, principles of their implementation. Methods of information resources of PLM-systems. Selection, combination and use of methods of information resources and models. Development of an educational PLM-system of threaded connections. Preparation of a scientific article.	45 hours
3	**Study of the principles of design and programming of mechatronic systems** Methods of reverse engineering in designing mechatronic systems, methods of measuring quantities in the operation of mechatronic devices, methods of analogue-digital signal conversion, standard microcontroller interfaces, basic algorithms of data processing. Application of CAD/CAE/CAM systems for the design and manufacture of portable metalworking systems. Application of machine vision technologies in robotics and quality control of machine-building products. Preparation for a report at a scientific conference.	45 hours
4	**Application of machine learning methods for solving problems of engineering mechanics** Review of packages for machine learning. Basic methods. Supervised machine learning methods. Data preprocessing methods and unsupervised machine learning methods. Methods for constructing features. Methods for assessing and improving the quality of models. Preparation for a report at a scientific conference.	45 hours

Total: 180 study/work hours (6 ECTS credits)

CERTIFICATE

this is to certify that
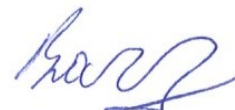
Alexey KOTLIAR

Candidate of Engineering Sciences, Associate Professor

Associate Professor at the Department of Technology of Mechanical Engineering and Metal-Cutting Machine Tools, National Technical University "Kharkiv Polytechnic Institute"

passed a scientific and pedagogical internship from April 08 to May 23, 2024, at the Department of Electrical Engineering, Electronic and Computers from
Technical University of Cluj-Napoca,
North University Center of Baia Mare,
in the amount of 6 credits (180 hours)

Internship Supervisor

Assoc. Prof. Eng. Cristian BARZ PhD

Cluj-Napoca 23.05.2024

Internship program

1	**Application of CAD and CAE systems for research and improvement of technical objects on the example of turbocharger** Investigation of ways to optimise the mixed flow rotor blade edge. Performing verification of A-type blade leading edge optimisation, present methods of leading edge improvement. Solutions of the averaged Navier-Stokes equations acting on the flow through the turbine type A to perform in the computer modelling system ANSYS CFX.15. Preparation of a scientific article.	45 hours
2	**Study of the principles of building PLM-systems in mechanical engineering** Application of a system approach to designing PLM-systems. Structure and capabilities of PLM systems. Typical architectures of PLM-systems, principles of their implementation. Methods of information resources of PLM-systems. Selection, combination and use of methods of information resources and models. Development of an educational PLM-system of threaded connections. Preparation of a scientific article.	45 hours
3	**Study of the principles of design and programming of mechatronic systems** Methods of reverse engineering in designing mechatronic systems, methods of measuring quantities in the operation of mechatronic devices, methods of analogue-digital signal conversion, standard microcontroller interfaces, basic algorithms of data processing. Application of CAD/CAE/CAM systems for the design and manufacture of portable metalworking systems. Application of machine vision technologies in robotics and quality control of machine-building products. Preparation for a report at a scientific conference.	45 hours
4	**Application of machine learning methods for solving problems of engineering mechanics** Review of packages for machine learning. Basic methods. Supervised machine learning methods. Data preprocessing methods and unsupervised machine learning methods. Methods for constructing features. Methods for assessing and improving the quality of models. Preparation for a report at a scientific conference.	45 hours

Total: 180 study/work hours (6 ECTS credits)

UNIVERSITATEA
TEHNICĂ
DIN CLUJ-NAPOCA

Facultatea de Inginerie

CERTIFICATE

this is to certify that
Kozhushko Andrii

**Doctor of Engineering Sciences, Associate Professor
Associate Professor at the Department of Car and
Tractor Industry,
National Technical University "Kharkiv Polytechnic
Institute"**

passed a scientific and pedagogical internship from April 08 to
May 23, 2024, at the Department of Electrical Engineering,
Electronic and Computers from
Technical University of Cluj-Napoca,
North University Center of Baia Mare,
in the amount of 6 credits (180 hours)

Internship Supervisor

Assoc. Prof. Eng. Cristian BARZ PhD

Cluj-Napoca 23.05.2024

Internship program

1	**Application of CAD and CAE systems for research and improvement of technical objects on the example of turbocharger** Investigation of ways to optimise the mixed flow rotor blade edge. Performing verification of A-type blade leading edge optimisation, present methods of leading edge improvement. Solutions of the averaged Navier-Stokes equations acting on the flow through the turbine type A to perform in the computer modelling system ANSYS CFX.15. Preparation of a scientific article.	45 hours
2	**Study of the principles of building PLM-systems in mechanical engineering** Application of a system approach to designing PLM-systems. Structure and capabilities of PLM systems. Typical architectures of PLM-systems, principles of their implementation. Methods of information resources of PLM-systems. Selection, combination and use of methods of information resources and models. Development of an educational PLM-system of threaded connections. Preparation of a scientific article.	45 hours
3	**Study of the principles of design and programming of mechatronic systems** Methods of reverse engineering in designing mechatronic systems, methods of measuring quantities in the operation of mechatronic devices, methods of analogue-digital signal conversion, standard microcontroller interfaces, basic algorithms of data processing. Application of CAD/CAE/CAM systems for the design and manufacture of portable metalworking systems. Application of machine vision technologies in robotics and quality control of machine-building products. Preparation for a report at a scientific conference.	45 hours
4	**Application of machine learning methods for solving problems of engineering mechanics** Review of packages for machine learning. Basic methods. Supervised machine learning methods. Data preprocessing methods and unsupervised machine learning methods. Methods for constructing features. Methods for assessing and improving the quality of models. Preparation for a report at a scientific conference.	45 hours

Total: 180 study/work hours (6 ECTS credits)

UNIVERSITATEA
TEHNICĂ
DIN CLUJ-NAPOCA

Facultatea de Inginerie

CERTIFICATE

this is to certify that
Olena Naboka

Candidate of Engineering Sciences, Associate Professor
Professor at the Department of Technology of Mechanical Engineering and Metal-Cutting Machine Tools
National Technical University "Kharkiv Polytechnic Institute"

passed a scientific and pedagogical internship from April 08 to May 23, 2024, at the Department of Electrical Engineering, Electronic and Computers from
Technical University of Cluj-Napoca,
North University Center of Baia Mare,
in the amount of 6 credits (180 hours)

Internship Supervisor

Assoc. Prof. Eng. Cristian BARZ PhD

Cluj-Napoca 23.05.2024

Internship program

1	**Application of CAD and CAE systems for research and improvement of technical objects on the example of turbocharger** Investigation of ways to optimise the mixed flow rotor blade edge. Performing verification of A-type blade leading edge optimisation, present methods of leading edge improvement. Solutions of the averaged Navier-Stokes equations acting on the flow through the turbine type A to perform in the computer modelling system ANSYS CFX.15. Preparation of a scientific article.	45 hours
2	**Study of the principles of building PLM-systems in mechanical engineering** Application of a system approach to designing PLM-systems. Structure and capabilities of PLM systems. Typical architectures of PLM-systems, principles of their implementation. Methods of information resources of PLM-systems. Selection, combination and use of methods of information resources and models. Development of an educational PLM-system of threaded connections. Preparation of a scientific article.	45 hours
3	**Study of the principles of design and programming of mechatronic systems** Methods of reverse engineering in designing mechatronic systems, methods of measuring quantities in the operation of mechatronic devices, methods of analogue-digital signal conversion, standard microcontroller interfaces, basic algorithms of data processing. Application of CAD/CAE/CAM systems for the design and manufacture of portable metalworking systems. Application of machine vision technologies in robotics and quality control of machine-building products. Preparation for a report at a scientific conference.	45 hours
4	**Application of machine learning methods for solving problems of engineering mechanics** Review of packages for machine learning. Basic methods. Supervised machine learning methods. Data preprocessing methods and unsupervised machine learning methods. Methods for constructing features. Methods for assessing and improving the quality of models. Preparation for a report at a scientific conference.	45 hours

Total: 180 study/work hours (6 ECTS credits)

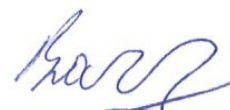# CERTIFICATE

this is to certify that
Alexander Permyakov

Doctor of Engineering Sciences, Professor
Chair of the Department of Technology of Mechanical Engineering and Metal-Cutting Machine Tools,
National Technical University "Kharkiv Polytechnic Institute"

passed a scientific and pedagogical internship from April 08 to May 23, 2024, at the Department of Electrical Engineering, Electronic and Computers from
Technical University of Cluj-Napoca,
North University Center of Baia Mare,
in the amount of 6 credits (180 hours)

Internship Supervisor

Assoc. Prof. Eng. Cristian BARZ PhD

Cluj-Napoca 23.05.2024

Facultatea de Inginerie

Internship program

1	**Application of CAD and CAE systems for research and improvement of technical objects on the example of turbocharger** Investigation of ways to optimise the mixed flow rotor blade edge. Performing verification of A-type blade leading edge optimisation, present methods of leading edge improvement. Solutions of the averaged Navier-Stokes equations acting on the flow through the turbine type A to perform in the computer modelling system ANSYS CFX.15. Preparation of a scientific article.	45 hours
2	**Study of the principles of building PLM-systems in mechanical engineering** Application of a system approach to designing PLM-systems. Structure and capabilities of PLM systems. Typical architectures of PLM-systems, principles of their implementation. Methods of information resources of PLM-systems. Selection, combination and use of methods of information resources and models. Development of an educational PLM-system of threaded connections. Preparation of a scientific article.	45 hours
3	**Study of the principles of design and programming of mechatronic systems** Methods of reverse engineering in designing mechatronic systems, methods of measuring quantities in the operation of mechatronic devices, methods of analogue-digital signal conversion, standard microcontroller interfaces, basic algorithms of data processing. Application of CAD/CAE/CAM systems for the design and manufacture of portable metalworking systems. Application of machine vision technologies in robotics and quality control of machine-building products. Preparation for a report at a scientific conference.	45 hours
4	**Application of machine learning methods for solving problems of engineering mechanics** Review of packages for machine learning. Basic methods. Supervised machine learning methods. Data preprocessing methods and unsupervised machine learning methods. Methods for constructing features. Methods for assessing and improving the quality of models. Preparation for a report at a scientific conference.	45 hours

Total: 180 study/work hours (6 ECTS credits)

UNIVERSITATEA
TEHNICĂ
DIN CLUJ-NAPOCA

Facultatea de Inginerie

CERTIFICATE

this is to certify that
Vitalii Yepifanov

Candidate of Engineering Sciences, Professor
Director of Institute of Education and Science
in Mechanical Engineering and Transport National
Technical University "Kharkiv Polytechnic Institute"

passed a scientific and pedagogical internship from April 08 to
May 23, 2024, at the Department of Electrical Engineering,
Electronic and Computers from
Technical University of Cluj-Napoca,
North University Center of Baia Mare,
in the amount of 6 credits (180 hours)

Internship Supervisor

Assoc. Prof. Eng. Cristian BARZ PhD

Cluj-Napoca 23.05.2024

Internship program

1	**Application of CAD and CAE systems for research and improvement of technical objects on the example of turbocharger** Investigation of ways to optimise the mixed flow rotor blade edge. Performing verification of A-type blade leading edge optimisation, present methods of leading edge improvement. Solutions of the averaged Navier-Stokes equations acting on the flow through the turbine type A to perform in the computer modelling system ANSYS CFX.15. Preparation of a scientific article.	45 hours
2	**Study of the principles of building PLM-systems in mechanical engineering** Application of a system approach to designing PLM-systems. Structure and capabilities of PLM systems. Typical architectures of PLM-systems, principles of their implementation. Methods of information resources of PLM-systems. Selection, combination and use of methods of information resources and models. Development of an educational PLM-system of threaded connections. Preparation of a scientific article.	45 hours
3	**Study of the principles of design and programming of mechatronic systems** Methods of reverse engineering in designing mechatronic systems, methods of measuring quantities in the operation of mechatronic devices, methods of analogue-digital signal conversion, standard microcontroller interfaces, basic algorithms of data processing. Application of CAD/CAE/CAM systems for the design and manufacture of portable metalworking systems. Application of machine vision technologies in robotics and quality control of machine-building products. Preparation for a report at a scientific conference.	45 hours
4	**Application of machine learning methods for solving problems of engineering mechanics** Review of packages for machine learning. Basic methods. Supervised machine learning methods. Data preprocessing methods and unsupervised machine learning methods. Methods for constructing features. Methods for assessing and improving the quality of models. Preparation for a report at a scientific conference.	45 hours

Total: 180 study/work hours (6 ECTS credits)

CERTIFICATE

this is to certify that
Volodymyr Klitnoi

**Candidate of Engineering Sciences, Associate Professor
Head of the Department "Machine components and hydropneumatic systems"**

National Technical University "Kharkiv Polytechnic Institute"

passed a scientific and pedagogical internship from April 08 to May 23, 2024, at the Department of Electrical Engineering, Electronic and Computers from
Technical University of Cluj-Napoca,
North University Center of Baia Mare,
in the amount of 6 credits (180 hours)

Internship Supervisor

Assoc. Prof. Eng. Cristian BARZ PhD

Cluj-Napoca 23.05.2024

Internship program

1	**Application of CAD and CAE systems for research and improvement of technical objects on the example of turbocharger** Investigation of ways to optimise the mixed flow rotor blade edge. Performing verification of A-type blade leading edge optimisation, present methods of leading edge improvement. Solutions of the averaged Navier-Stokes equations acting on the flow through the turbine type A to perform in the computer modelling system ANSYS CFX.15. Preparation of a scientific article.	45 hours
2	**Study of the principles of building PLM-systems in mechanical engineering** Application of a system approach to designing PLM-systems. Structure and capabilities of PLM systems. Typical architectures of PLM-systems, principles of their implementation. Methods of information resources of PLM-systems. Selection, combination and use of methods of information resources and models. Development of an educational PLM-system of threaded connections. Preparation of a scientific article.	45 hours
3	**Study of the principles of design and programming of mechatronic systems** Methods of reverse engineering in designing mechatronic systems, methods of measuring quantities in the operation of mechatronic devices, methods of analogue-digital signal conversion, standard microcontroller interfaces, basic algorithms of data processing. Application of CAD/CAE/CAM systems for the design and manufacture of portable metalworking systems. Application of machine vision technologies in robotics and quality control of machine-building products. Preparation for a report at a scientific conference.	45 hours
4	**Application of machine learning methods for solving problems of engineering mechanics** Review of packages for machine learning. Basic methods. Supervised machine learning methods. Data preprocessing methods and unsupervised machine learning methods. Methods for constructing features. Methods for assessing and improving the quality of models. Preparation for a report at a scientific conference.	45 hours

Total: 180 study/work hours (6 ECTS credits)

UNIVERSITATEA
TEHNICĂ
DIN CLUJ-NAPOCA

Facultatea de Inginerie

CERTIFICATE

this is to certify that
Ihor Yakovenko

Candidate of Engineering Sciences, Associate Professor
Professor at the Department of Technology of Mechanical Engineering and Metal-Cutting Machine Tools,
National Technical University "Kharkiv Polytechnic Institute"

passed a scientific and pedagogical internship from April 08 to May 23, 2024, at the Department of Electrical Engineering, Electronic and Computers from
Technical University of Cluj-Napoca,
North University Center of Baia Mare,
in the amount of 6 credits (180 hours)

Internship Supervisor

Assoc. Prof. Eng. Cristian BARZ PhD

Cluj-Napoca 23.05.2024

Internship program

1	**Application of CAD and CAE systems for research and improvement of technical objects on the example of turbocharger** Investigation of ways to optimise the mixed flow rotor blade edge. Performing verification of A-type blade leading edge optimisation, present methods of leading edge improvement. Solutions of the averaged Navier-Stokes equations acting on the flow through the turbine type A to perform in the computer modelling system ANSYS CFX.15. Preparation of a scientific article.	45 hours
2	**Study of the principles of building PLM-systems in mechanical engineering** Application of a system approach to designing PLM-systems. Structure and capabilities of PLM systems. Typical architectures of PLM-systems, principles of their implementation. Methods of information resources of PLM-systems. Selection, combination and use of methods of information resources and models. Development of an educational PLM-system of threaded connections. Preparation of a scientific article.	45 hours
3	**Study of the principles of design and programming of mechatronic systems** Methods of reverse engineering in designing mechatronic systems, methods of measuring quantities in the operation of mechatronic devices, methods of analogue-digital signal conversion, standard microcontroller interfaces, basic algorithms of data processing. Application of CAD/CAE/CAM systems for the design and manufacture of portable metalworking systems. Application of machine vision technologies in robotics and quality control of machine-building products. Preparation for a report at a scientific conference.	45 hours
4	**Application of machine learning methods for solving problems of engineering mechanics** Review of packages for machine learning. Basic methods. Supervised machine learning methods. Data preprocessing methods and unsupervised machine learning methods. Methods for constructing features. Methods for assessing and improving the quality of models. Preparation for a report at a scientific conference.	45 hours

Total: 180 study/work hours (6 ECTS credits)