Senter for internasjonalisering av utdanning - SIU

1 7 FEB 2017

Eurasia 2016 - Long-term Project document

Project identification

Project number

CPEA-LT-2016/10139

Project title

Norway-Ukrainian cooperation in mathematical education

CONTRACT

Special conditions

A. CONTRACTING PARTIES

This contract is entered into by and between;

The Norwegian Centre for International Cooperation in Education, with organisation number 986 339 523 (hereinafter referred to as "SIU"); and

University of Oslo

(hereinafter referred to as the "Institution in Norway" or "IIN")

B. CONTRACT DOCUMENTS AND RULES OF INTERPRETATION

The Contract consists of these Special Conditions, the General Conditions and the Project Document. If there is a conflict between provisions in the Contract, the Special Conditions shall prevail over the General Conditions, and the General Conditions over the Project Document.

C. FINANCIAL CONTRIBUTION FROM SIU

In pursuance of (a) the Norwegian Cooperation Programme in Higher Education with Eurasia (the «Programme»), established through "Avtale om forvaltning av tilskuddsmidler og samarbeid mellom Utenriksdepartementet og Senter for internasjonalisering av utdanning (SIU) i perioden 2015-2020" (the «Programme Document»), and (b) the approval of the Project made by the committee authorized to allocate funds under the Programme Document, SIU hereby undertakes – on the terms and conditions set out herein this Contract – to make the following financial contribution (the «Funds») to the Institution in Norway in respect of the Project:

NOK 2991460

The Funds will be paid to the Institution in Norway in accordance with the schedule set out in Article D.1.

D. PROGRAMME AND PROJECT SPECIFIC PROVISIONS

Notwithstanding anything to the contrary in this Contract, the following specific provisions shall apply:

D.1 Disbursement of the Funds

In the first year of the Project, SIU shall pay: (i) 80 per cent of the amount budgeted for the first year of the Project as soon as possible and latest within 45 days after receipt of a duly signed and dated copy of the Contract; and (ii) 20 per cent of the amount budgeted for the first year of the Project within 45 days after SIU's approval of the start-up report (to be delivered to SIU within the deadline set in Article D.2.). In subsequent years of the Project, SIU will within 1 March disburse 60 per cent of the amount budgeted for the relevant year in the last progress report approved by SIU. The balance of the amount budgeted will be revised by SIU on basis of the subsequent progress report delivered in the Project. The balance (as revised) will be transferred latest within 45 days of SIU's approval of the subsequent progress report. Unused funds from the previous year, if any, may be deducted from the balance unless approved carried forward to the next year's budget. SIU's decisions with regard to approval or otherwise of the annual/final project reports and accounts shall be final.

D.2 Reporting obligations

The Institution in Norway shall within **1 September 2017** provide SIU with a start-up report, including a short description of the progress of project activities and any anticipated obstacles going forward.

Thereafter, the Institution in Norway shall provide SIU with annual progress reports, including updated accounts, and a description of the progress of ongoing/planned project activities and any anticipated obstacles going forward. The annual progress reports shall be submitted to SIU within **1 March** each year. Lastly, upon finalisation of the Project, the Institution in Norway shall without undue delay provide SIU with a final project report containing final accounts for the Project, and a description of the Project Results together with an assessment of the overall success of the Project. The Institution in Norway must, to the extent necessary, consult all involved partners in order to prepare complete reports. The reports shall be delivered via SIU's online system Espresso.

D.3 Programme specific provisions None.

D.4 Project specific provisions None.

General conditions

General conditions

Article 1 - Definitions

Subject to specific definitions made in the Special Conditions, the following terms shall have the meaning ascribed to them below:

Auditor General: The Office of the Auditor General of Norway (www.riksrevisjonen.no).

Force Majeure: A hindrance outside a party's control which is partly or wholly preventing it from performing its obligations under the Contract, and which could not reasonably have been foreseen or overcome.

Project: The project described in the Project Document.

Project Coordinator: The person designated as such in Section A.1 and A.2 of the Project Description.

Project Description: The information set out in Sections A - E.

Project Results: All results produced or achieved through the Project and capable of being protected under any intellectual property law, regardless of their form, nature and localization.

Article 2 - Project administration

The Institution in Norway shall make its utmost efforts to ensure that the Project is implemented in accordance with the Project Document, and proactively seek to formalize and coordinate project activities with all involved personnel and partners. The Project Coordinator shall ensure that all notification and reporting obligations set out herein are duly complied with.

The Institution in Norway shall ensure (a) that the implementation of the Project comply with all applicable statutes, laws and regulations in force or entering into force in the project period, as well as recognised norms for good project governance; and (b) that adequate steps shall at all times are taken to prevent/mitigate risk of irregularities, corruption and/or other unethical practices, in compliance with the «Guidelines for handling irregularities» (accessible on SIU's webpage).

The Institution in Norway warrants that the Funds (including any interest earned thereon) will be used exclusively for the purposes of implementing the Project, and that the project management will establish appropriate procedures for managing the Project's financial aspects (budgeting, accounting, reporting, etc.).

Article 3 - Disbursement, transfers and reservations

All disbursement obligations on part of SIU are subject to SIU's receipt of the allocation made under the Programme and any instructions from the entity/ies ultimately funding the Programme.

SIU shall be notified without delay if the Project is likely to receive grants or other similar funding from other public or private persons/entities. If such alternative funding results in a reduction of the own share of the Institution in Norway or its partners receiving a part of the Funds in the Project, SIU may reduce the Funds accordingly. The Institution in Norway shall be consulted before any such reductions are made.

If, after the Project has been completed, there exist any unused part of the Funds, such amount shall be repaid to SIU according to invoice. If the Funds are insufficient to ensure due completion of the Project, the Institution in Norway shall pay the amount necessary to complete the Project.

SIU accepts no liability for loss due to unfavorable exchange rates, errors in banking details provided, or adverse tax implications, and SIU will not cover any bank related costs/charges. Return of funds to SIU shall be made in the same currency as the disbursement from SIU.

Article 4 - Accounting, verification and audits

The Institution in Norway shall keep a separate project account for the Project, specifying the actual income and costs in the Project. The project account shall be kept current and in all respects be compliant with internationally recognised accounting principles, and form part of the Institution in Norway's formal accounts.

SIU and the Auditor General shall be entitled at any time to verify that the Funds are being applied in accordance with the Contract, and shall upon request be forthwith presented with receipts, time sheets, calculations and any other relevant documentary evidence necessary to carry out such verifications, and be allowed to inspect the progression of project activities and results. SIU reserves the right to carry out random audit checks without any prior notice.

Article 5 - Reporting

If SIU at any time finds the reporting obligations set out in Article D.2 insufficient to meet SIU's needs for information regarding the Project, SIU may amend the reporting obligation to meet such needs. Such amendments shall be notified well in advance and not be unreasonable.

Unless otherwise specified, all reporting pursuant to the Contract shall be made through SIU's online system "Espresso" (http://espresso.siu.no). All reporting on budgets and accounts shall be made in the same currency as the Funds.

Article 6 - Transfer of a part of the Funds to third parties

Insofar necessary in order to implement the Project, the Institution in Norway may transfer parts of the Funds to other institutions in Norway or abroad.

The Institution in Norway must ensure that the recipients of such transfers undertake to provide it with sufficient documentation to comply with its accounting and reporting obligations under this Contract.

Except from scholarships paid out to students in pursuance of the Project, salaries to personnel at the Institution in Norway and other amounts customarily paid out directly to personnel involved in such projects (e.g. per diem and the like), no part of the Funds may be transferred directly to any private person in Norway or abroad without SIU's prior written consent.

Article 7 - Liabilities and indemnifications

SIU's legal and financial responsibility in respect of the Project is strictly limited to its obligation to disburse the Funds in accordance with the terms and conditions of the Contract.

The Institution in Norway shall keep SIU fully indemnified from all risk, liabilities, claims, proceedings and any other adverse or potentially adverse effects whatsoever arising out of or in connection with the Project and/or the personnel/partners involved.

Article 8 - Use, publication and protection of Project Results

Unless otherwise agreed, the Institution in Norway shall publish the Project Results without undue delay after completion, and the Project Results shall thereafter remain available to the public on reasonable terms. Insofar necessary to secure such public access to the Project Results, SIU shall enjoy a royalty-free, non-exclusive, non-commercial right to translate, reproduce and distribute the Project Results, subject only to payment of costs necessary to facilitate such use.

Presentations of the Project and/or the Project Results to the public shall mention that the Project is funded by SIU and the relevant ministry under the Programme. Presentation to the public includes any presentation in any form to any part of the public.

Article 9 - Transfer of rights and use of sub-contractors

The Institution in Norway may not transfer, mortgage or otherwise pledge any of its rights and/or obligations under the Contract, without the prior written consent of SIU. The use of sub-contractors does not release the Institution in Norway from its obligations under the Contract, and sub-contractors may not be granted any form of entitlement to Project Results. Transfer of rights relating to the Project Results shall not prejudice SIU's rights pursuant to Article 8.

Article 10 - Deviations from the Project Document

Significant deviations from the project implementation procedure set out in the Project Document shall be forthwith notified to SIU in writing, and may not be deferred to the annual progress report. A deviation shall be considered significant (a) if it is likely to have an adverse effect > 20 per cent on the Project's yearly budget or progress; (b) if it involves changes to the Project management (hereunder the Project Coordinator or central academic personnel) in the Institution in Norway or any of its partner(s); or (c) if the deviation leads to any other major changes in the Project's implementation as set out in the Project Document (e.g. cancellation or considerable alteration of central project activities, damage or loss of key infrastructure, etc.).

The notice to SIU shall describe the deviation(s) and set out which measures have been/will be implemented to avoid/mitigate its effects and the prospect of such measures' success. Upon receipt of the notice, SIU will assess which impact the deviation(s) shall have on the Contract. Until SIU has responded, the Institution in Norway shall refrain from major financial dispositions in relation to the Project (e.g. payout to partners, accept comprehensive obligations, etc.) and to the extent possible seek to impose the same restriction on its partner(s).

If the deviation is remediable, SIU shall provide the Institution in Norway with a reasonable number of days to either remedy the deviation (grace period), or propose an amendment to the Project Document

which mitigates its prejudicing effects or is otherwise agreeable. If the deviation is not remedied within the grace period, and no reasonable amendment of the Project Document is made available, SIU may discontinue its funding of the Project and instruct the Institution in Norway to immediately repay, and seek repaid from its partner(s), any unused part of the Funds. The Institution in Norway and its partner(s) shall be duly consulted before such discontinuation.

Article 11 - Breach of the Contract

Upon anticipated or occurred breach of the Contract, or reasonable suspicion thereof, SIU may wholly or partly suspend its disbursement of the Funds, and instruct the Institution in Norway to immediately (a) suspend the use of any part of the Funds already paid out to it, and (b) seek suspended the use of any part of the Funds paid out to its partner(s). Such instructions shall be confirmed in writing without undue delay.

The Institution in Norway shall always be provided with a reasonable number of days to rectify a breach (grace period). If the breach has not been rectified within the grace period, SIU may terminate the Contract and instruct the Institution in Norway to immediately repay, and seek repaid from its partner(s), any unused part of the Funds.

If the breach is substantial, SIU may instruct the Institution in Norway to immediately (a) repay, and seek repaid from its partner(s), any part of the Funds (whether used or not); and (b) transfer, and seek transferred from its partner(s), all rights to the Project Results and infrastructure primarily paid for by the Funds. Substantial breach includes, but is not limited to, (i) any act of fraud, corruption or other unethical practice by the Institution in Norway, its personnel or partner(s); (ii) anticipated or actual bankruptcy, dissolution or other winding up of the Institution in Norway or its partner(s); (iii) transfer of majority ownership and/or control in the Institution in Norway to an entity having jurisdiction outside the EEA; (iv) failure to abide by the rules referred to in Article 2; (v) failure to exclusively use the Funds on the Project in accordance with Article 2; (vi) failure to comply with audit requests in accordance with Article 4; (vii) failure to report to SIU in accordance with Article 5; (viii) breach of Article 6; (ix) failure to notify SIU of significant deviations in accordance with Article 10; and (x) any other substantial and continued failure to perform obligations under the Contract.

Article 12 - Force Majeure

If a breach of the Contract or a significant deviation from the Project Document is resulting solely from Force Majeure, the sanctions set out in Articles 10 and 11 may not be used.

If, however, the Force Majeure results in a situation where it is unlikely that the Project may be completed in accordance with the Project Document, or in any other reasonable way yielding similar results to those sought achieved in the Project, SIU may discontinue its funding of the Project and instruct the Institution in Norway to immediately repay, and seek repaid from its partner(s), any unused part of the Funds. The Institution in Norway and its partner(s) shall be duly consulted before such discontinuation.

Article 13 - Miscellaneous provisions

SIU generally reserves the right to invoke any rights and remedies it may have under Norwegian law.

Failure to exercise, or any delay in exercising, any right or remedy under the Contract or any applicable law, shall not in any way constitute a waiver of that or any other right or remedy, and no single or partial exercise of any such rights or remedies shall preclude or restrict the further exercise of such rights or remedies.

Any decision made by SIU in pursuance of Articles 10, 11 and 12 shall be deemed final. Such decisions may only be challenged through the procedure for settlement of disputes in Article 14.

This Contract does not confer any rights or remedies on third parties.

Article 14 - Settlement of disputes

The Contract shall be governed by and interpreted in accordance with Norwegian law. Any dispute arising out of or in connection with the Contract shall be sought resolved amicably. If the dispute cannot be resolved amicably, the Norwegian ministry (or such other entity) in charge of the Programme shall have absolute discretion to resolve the matter.

Bank information	
Bank details	DNB Bank ASA
Dalik Ilailie	DIAD Darik AOA
Bank address	Dronning Eufemias gate 30 N-0191 Oslo Norway
Bank account holder	
Ellen Johanne Caesar, I cashier's office)	Problemveien 5-7, N-0317 Oslo, Norway (Universitetet i Oslo - Regnskap/
Payment reference	151300/E.H.Seland, eurasia

Signatures

Signature - Norwegian Centre for International Cooperation in Education (SIU)

Date:	Signature:
16/2/2017	14 Lit
Position:	(r c Mosure
	Director General Harald E. Nybølet

Signature - Institution in Norway

Legal representative, print name and title Geir Dahl, Head of Department of Mathematics

Legal representative, signature

Date:	Signature:
6/2-17	C
Position:	- Jin Dall
Head of dept.	

А

A.1 Main partner institution in Norway

Main partner institution in Norway (IiN)

University of Oslo (NO-UiO)

Department (IIN)

Department: Department of Mathematics

Head of department (IIN)

Name:	Dahl , Geir
Email:	research@math.uio.no
Phone number:	+47 22 85 58 88

Project coordinator (IIN)

Name:	Proske, Frank
Gender:	Male
Email:	proske@math.uio.no
Phone number:	+4722855867

A.2 Main partner institution outside Norway

Main partner institution outside Norway (IoN)

National Technical University of Ukraine - "Kyiv Polytechnic Institute" (UA-NTUU KPI)

Department (IoN)

Department: Department of Mathematical Analysis And Probability Theory

Head of department (IoN)

Name:	Klesov, Oleg
Gender:	Male
Email:	klesov@matan.kpi.ua
Phone number:	+380683226071

Project coordinator (IoN)

Name:	Klesov, Oleg
Gender:	Male
Email:	klesov@matan.kpi.ua
Phone number:	+380683226071

A.3 Network partners

A.3.1 Are any enterprises in the public and/or private sector partners in the project? Yes

A.3.2 List of network partners

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Institution:	UA-Donetsk National University (Vinnitsa city) (UA)	
Unit:	Faculty for Mathematics and Information Technologies	
Contact person:	Baev, Artem	
Gender:	Male	
Degree:	PhD	
Position:	Dean of the Faculty of Mathematics and Information Technologies	
Email:	a.baev@donnu.edu.ua	
Phone number:	+380506022747	
Institution:	UA-Uzhhorod State University (UA)	
Unit:	Department of Probability Theory and Mathematical Analysis	
Contact person:	Mlavets', Yurii	
Gender:	Male	
Degree:	PhD	
Position:	Associate Professor	
Email:	yura-mlavec@ukr.net	
Phone number:	+380966526188	

Institution:	NO-Studix (NO)	
Unit:	Studix	
Contact person:	Elmasoudi, Ali	
Gender:	Male	
Degree:	Master in Mathematics	
Position:	co-owner of Studix	
Email:	ali@studix.no	
Phone number:	+4797775616	
Institution:	UA-TAS Insurance Group (UA)	
Unit:	TAS	
Contact person:	Panfilova, Anna	
Gender:	Female	
Degree:	Naster in Mathematics	
Position:	Head of Department	
Email:	panfilove@ukr.net	
Phone number:	+380675040956	

Name:	Amine, Oussama	
Gender:	Male	
Degree:	Master in Mathematics PhD student	
Position:		
Institution:	NO-University of Oslo	
Name:	Baev, Artem	
Gender:	Male	
Degree:	PhD	
Position:	Professor	
Institution:	UA-Donetsk National University (Vinnitsa city)	
Name:	Benth, Fred Espen	
Gender:	Male	
Degree:	PhD	
Position:	Professor	
Institution:	NO-University of Oslo	
Name:	Biagini, Francesca	
Gender:	Female	
Degree:	PhD	
Position:	Professor II	
Institution:	NO-University of Oslo	
Name:	Blazhievska, Iryna	
Gender:	Female	
Degree:	PhD	
Position:	Assistant Professor	
Institution:	UA-National Technical University of Ukraine - "Kyiv Polytechnic Institute"	
Name:	Bodnarchuk, Semen	
Gender:	Male	
Degree:	PhD	
Position:	Assistant Professor	
Institution:	UA-National Technical University of Ukraine - "Kyiv Polytechnic Institute"	
Name:	Bølviken, Erik	
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Gender	Male
Degree	PhD
Position:	Professor
Institution:	NO-I Iniversity of Oslo
Name:	Di Nunno, Giulia
Gender:	Female
Degree:	PhD
Position:	Professor
Institution:	NO-University of Oslo
Name	Dorogouteev Andrey
Gender:	Mala
Degree	Doctor of Science (hebilitated)
Position:	Professor
Institution:	1 A-National Technical I Iniversity of I Knaine - "Kviv Polytechnic Institute"
Name:	Elmasoudi, Ali
Gender:	Male
Degree:	Master in Mathematics
Position:	Co-owner of the e-learning company Studix
Institution:	NO-University of Oslo
Neme	Gracual Visita
Gender:	Eamele
Degree:	Master of Methematice
Degition:	PhD Student
Postivition:	THE Student
Name:	Haff, Ingrid Hobæk
Name: Gender:	Haff, Ingrid Hobæk Female
Name: Gender: Degree:	Haff, Ingrid Hobæk Female PhD
Name: Gender: Degree: Position:	Haff, Ingrid Hobæk Female PhD Associate Professor
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Name: Gender: Degree: Position: Institution: Name: Gender: Degree:	Haff, Ingrid Hobæk Female PhD Associate Professor NO-University of Oslo Harang, Fabian Male Master in Mathematics
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Name: Kozachenko, Yurii Gender: Male Degree: Doctor of Science (habilitated) Position: Professor Institution: UA-Donetsk National University (Vinnitsa city) Name: Lindstrøm, Tom Gender: Male Degree: PhD Position: Professor Institution: NO-University of Oslo Name: Malexitional Technical University of Ukraine - "Kyiv Polytechnic Institution: Degree: PhD Position: Assistant Professor Institution: UA-National Technical University of Ukraine - "Kyiv Polytechnic Institution: Name: Malexets, Yurii Gender: Male Degree: PhD Position: Associate Professor Institution: UA-Vazhorod State University Name: Moklyachuk, Oleksander Gender: Male Degree: PhD Position: Associate Professor Institution: UA-National Technical University of Ukraine - "Kyiv Polytechnic Instituton: <t< th=""><th>Institution:</th><th colspan="2">UA-National Technical University of Ukraine - "Kyiv Polytechnic Institute"</th></t<>	Institution:	UA-National Technical University of Ukraine - "Kyiv Polytechnic Institute"	
Gender: Male Degree: Doctor of Science (habilitated) Poetlion: Professor Institution: UA-Donetak National University (Vinnitsa city) Name: Lindstrøm, Tom Gender: Male Degree: PhD Position: Professor Institution: NO-University of Oslo Name: Malovichko, Tetyana Gender: Female Degree: PhD Position: Assistant Professor Institution: UA-National Technical University of Ukraine - "Kyiv Polytechnic Institut Name: Makets, Yurii Gender: Male Degree: PhD Position: Associate Professor Institution: UA-National Technical University of Ukraine - "Kyiv Polytechnic Institution: Name: Moklyachuk, Okesander Gender: Male Degree: PhD Position: Associate Professor Institution: UA-National Technical University of Ukraine - "Kyiv Polytechnic Instituton: Name: Ordovskii, Igor Gender: Male<	Name:	Kozachenko, Yurii	
Degree: Doctor of Science (habilitated) Position: Professor Institution: UA-Donetsk National University (Vinnitsa city) Name: Lindstrøm, Tom Gender: Male Degree: PhD Position: Professor Institution: NO-University of Oslo Name: Malovichko, Tetyana Gender: Female Degree: PhD Position: Assistant Professor Institution: UA-National Technical University of Ukraine - "Kylv Polytechnic Institution: Name: Malevis, Yurii Gender: Male Degree: PhD Position: Associate Professor Institution: UA-Uzhhorod State University Name: Moklyachuk, Oleksander Gender: Male Degree: PhD Position: Assistant Professor Institution: UA-Uzhhorod State University of Ukraine - "Kyiv Polytechnic Institution: Name: Octovskii, Igor Gender: Male Degree: PhD Position: <td>Gender:</td> <td colspan="2">Male</td>	Gender:	Male	
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Position: Associate Professor Institution: NO-University of Oslo Name: Panfilova, Anna Gender: Female Degree: Master in Mathematics Position: Head of Department Institution: UA-National Technical University of Ukraine - "Kyiv Polytechnic Institut	Degree:	PhD	
Institution: NO-University of Oslo Name: Panfilova, Anna Gender: Female Degree: Master in Mathematics Position: Head of Department Institution: UA-National Technical University of Ukraine - "Kyiv Polytechnic Institut	Position:	Associate Professor	
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Gender: Female Degree: Master in Mathematics Position: Head of Department Institution: UA-National Technical University of Ukraine - "Kyiv Polytechnic Institut	Name:	Panfilova, Anna	
Degree: Master in Mathematics Position: Head of Department Institution: UA-National Technical University of Ukraine - "Kyiv Polytechnic Institut	Gender:	Female	
Position: Head of Department Institution: UA-National Technical University of Ukraine - "Kyiv Polytechnic Institut	Degree:	Master in Mathematics	
Institution: UA-National Technical University of Ukraine - "Kyiv Polytechnic Institut	Position:	Head of Department	
	nstitution:	UA-National Technical University of Ukraine - "Kyiv Polytechnic Institute"	
Name: Pavlenkov, Vladimir	Name:	Pavlenkov, Vladimir	
Gender: Male	Gender:	Male	
Degree: Master of Mathematics	Degree:	Master of Mathematics	
Position: PhD Student	Position:	PhD Student	
Institution: UA-National Technical University of Ukraine - "Kyiv Polytechnic Institut	institution:	UA-National Technical University of Ukraine - "Kyiv Polytechnic Institute"	
Name: Pilipenko, Andrey	Name:	Pilipenko, Andrey	
Gender: Male	Gender:	Male	

Degree:	Dosctor of Science (habilitated)
Position:	Professor
Institution:	UA-National Technical University of Ukraine - "Kyiv Polytechnic Institute"
Name:	Prokhorenko, Natalia
Gender:	Female
Degree:	PhD
Position:	Assistant Professor
Institution:	UA-National Technical University of Ukraine - "Kyiv Polytechnic Institute"
Name:	Pryhoďko, Yurii
Gender:	Male
Degree:	Master in Mathematics
Position:	PhD Student
Institution:	UA-National Technical University of Ukraine - "Kyiv Polytechnic Institute"
Name:	Signal, Mikael
Gender:	Male
Degree:	PhD
Position:	Associate Professor
Institution:	NO-University of Agder
Name:	Slyvka-Teleshchak, Ganna
Gender:	Female
Degree:	Doctor of Science (habilitated)
Position:	Professor
Institution:	UA-Uzhhorod State University
Name:	Stordal, Eivind
Gender:	Male
Degree:	Master in Statistics
Position:	Co-owner of the e-learning company Studix
Institution:	NO-University of Oslo
Name:	Tegza, Antonina
Gender:	Female
Degree:	PhD
Position:	Associate Professor
Institution:	UA-Uzhhorod State University
Name:	Tymoshenko, Elena
Gender:	Female
Degree:	PhD
Position:	Assistant Professor
Institution:	UA-National Technical University of Ukraine - "Kyiv Polytechnic Institute"
Name:	Øksendal, Bernt
Gender:	Male
Degree:	PhD
Position:	Professor Emeritus
Institution:	NO-University of Oslo

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В

B.1 Information on the project

Project summary

B.1.1 Please provide a short summary of your project.

The main purpose of the project is to create long-lasting collaboration between University of Oslo and National Technical University of Ukraine "Kyiv Polytechnic Institute" (KPI), Kyiv, Ukraine, Uzhgorod National University (UNU), Uzhgorod, Ukraine, and Donetsk National University (DNU), Vinnitsa, Ukraine, in the field of pure and applied mathematics. The project is aimed at an essential reorganization and development of study programs in mathematics in Ukraine and directing them towards the needs of labour market by means of using new teaching methods based e.g. on adaptive e-learning systems (Studix) and Internationalization of related educational fields in Ukraine.

The aim is reached by intensive student and staff mobility including attending/giving courses at partner Universities; development of joint courses of lectures; organization of and participation in 3 Summer/ Winter schools and 2 conferences; joint scientific research work; joint publications in internationally recognized journals.

The project will also enhance the regional collaboration between Universities in Ukraine and create possibilities for mobility of students and staff of four participating universities. Students of Ukrainian universities will benefit because of more research-based and internationally oriented education. Norwegian and Ukrainian colleagues will considerably benefit from their joint scientific research works with involvement of students in the research plans.

One more goal of the project is to use the experience of Ukrainian colleagues in solving advanced mathematical problems and to participate in mathematical Olympiads at the university on national and international levels, which may attract more students in Norway to study mathematics at a higher level. Being traditional in Ukraine, this teaching method is not well developed in Norway, yet; and one could try to implement it at the University of Oslo, especially because the Department of Mathematics, UiO is applying to host the International Mathematics Olympiad in Oslo in 2022 (we do not know the outcome of this application yet).

All the activities in the framework of the project will be announced and reported in the official sites of all participating universities as well as in the newspaper by KPI.

The joint working group consisting of representatives of all participating Universities will monitor the activities in the framework of the project and reallocate forces for better achievement of the goal of the project.

Academic discipline(s)

B.1.2 Which academic discipline(s) is the project related to?

1: Mathematical sciences (301)

B.2 Background information

History of cooperation

B.2.1 Please give a brief description of the history of cooperation between the project partners.

The activities in the framework of the project fit very well to ongoing research activities at both Universities.

A. Pilipenko (KPI) has several times visited the University of Oslo in the framework of a bilateral scientific research cooperation

with F. Proske (University of Oslo) since 2014.

Yu. Prihod'ko, a PhD student from KPI, visited the University of Oslo during January 2016.

F. Proske and O. Klesov started a joint project on preparing a course of lectures on statistical machine learning. In this context a cooperation with the e-learning company Studix, Oslo has been initiated during a visit of O. Klesov to Oslo in August 2016.

Several Norwegian colleagues (B. Oksendal, G. di Nunno) have attended scientific conferences organized in Ukraine in preceding years. The most recent visit was made by F. Proske in October 2015.

Links to research

B.2.2 Please describe how the project is linked to ongoing research activities and research cooperation between the partner institutions.

Several scientific and educational joint projects have been already initiated and will certainly be continued during the project.

In the first place this concerns reflected stochastic differential equations and the small noise problem (A. Pilipenko and F. Proske),

fractional alpha-stable process driven equations (Yu. Prihod'ko and F. Proske). O. Klesov and F. Proske started discussing an implementation of a new course of lectures on statistical machine learning. This course is going to be offered to students of both countries at the same time during the project and they may benefit from attending lectures of both professors.

Some issues on Item Response Theory for estimating the quality of tests for students have also been a topic of joint scientific interests of Norwegian and Ukrainian colleagues. Some results and software designs of them can be used to evaluate and measure the quality of new courses offered to students in the framework of this project. The last but not the least is the joint idea of using new teaching technologies offered by the e-learning company Studix in Oslo that allow students independently to acquire knowledge and online check their skills, come back to difficult questions and to get an explanation from another point of view. Studix will also contribute to our project by providing software licenses, by co-supervising master and PhD students and by giving research seminars at our partner universities, which will serve as a useful tool for exchanging new ideas in the field of adaptive e-learning systems and machine-learning based e.g. on rough path theory and probabilistic algorithms. In this way students will be attracted in connection with research problems in the challenging and important area of e-learning and related fields.

Previous and parallel funding

B.2.3 Previous funding

O. I. Klesov (KPI) visited University of Oslo in September 2015 in the framework of SIU call for seed money (Item: 2015/204-40-9594/2015)

O. I. Klesov (KPI) visited University of Oslo in August-September 2016 in the framework of SIU call for seed money (Item: CPEA-PD-2016/10040)

B.2.4 Concurrent applications

No other joint application is prepared/submitted

B.3 Description of the project

B.3.1

Project goals

B.3.1.1 Please state the goals of the project.

The project seems to fit well the primary objectives of the SIU Eurasia Program.

1) One of the main goals of the project is the development of long-lasting collaboration between the University of Oslo and National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine (NTUU KPI), Uzhgorod National University, Uzhgorod, Ukraine, and Donetsk National University, Vinnitsa, Ukraine in the field of pure and applied mathematics, especially in the area of stochastic analysis including a broad range of branches of probability theory and its applications, with emphasis on development of new teaching methods and essential renovation and internationalization of related educational fields in Ukraine. In realizing this goal, new teaching methods will be implemented by employing e.g. innovative adaptive e-learning systems developed by the company Studix in Oslo. Studix will also provide us with e-laerning program licences, give seminars at the partner universities and co-supervise master and PhD students in connection research projects on e-learning systems and machine learning based e.g. on stochastic algorithms.

Joint workshops, seminars, and conferences to be organized in the framework of the project will also lead to more interest in becoming acquainted with the society and culture of Ukraine from Norwegian partners and vice verse. Summer/Winter schools on particular mathematical topics (organized in a less formal environment than the university is) will serve this goal as well.

2) The project will also enhance the regional collaboration between Universities in Ukraine, since the partner universities are somewhat equally scattered over Ukraine- a circumstance, which enables other educational institutions in the country to participate in and contribute to our activities.

3) The study programs on applied aspects of mathematics, which is comprehensive, will improve at the partner universities in the direction of the needs of the labour market (such a reorganization of the education system is the main priority declared by the Ministry of Education of Ukraine).

4) The project will support the intention of the partner universities to introduce a more research-oriented system at (mainly) Master and PhD levels. This requires new curricula and the University of Oslo will share its experience to teach more applied courses at an European level in the framework of the Bologna process.

5) As a by-product of what is mentioned above, the education at the partner universities in Ukraine will become more attractive for students and enterprises will be more interested to cooperate with the universities. This is planned to be supported by involving master and PhD students in the co-supervision of research projects or in internships in connection with IT-companies like Studix in Oslo (Ali Elmasoudi, Eivind Stordal) or actuarial companies (as e.g. Gabler via our partner Erik Bølviken in Oslo) and by inviting staff of such companies to present mini-courses on "hot topics" at summer/winter schools.

6) The activities in the framework of the project will certainly lead to an increased awareness, interest and knowledge of the Ukraine in view of a considerable high amount of Norwegian participants in schools, conferences, and exchanges assumed in the project.

7) The student and staff mobility will certainly increase due to an intensive exchange scheme assumed in this project. It is expected that students will become interested in such a project in view of the cosupervision by professors from both universities and since students will be involved in joint scientific research. Professors of both universities will also be attracted by such a project in view of new possibilities for cooperation including guest lecturing, developing new joint online courses, doing joint scientific research work.

B.3.1.2 Please describe the needs to be addressed by the project.

There are two target groups for the proposed project activities, namely students and professors (or academic staff). The priorities declared by the Ministry of Education of Ukraine lie in a more researchoriented system directed towards market demands and this obviously requires new study programs, new courses, and new teaching methods. Another priority involves internationalization of education including an extended cooperation with Europe in the framework of Bologna process, as well. All these lead to the necessity for Ukrainian professors to make use of teaching experience of their European colleagues, Norwegian colleagues as in the case of this project. Several activities in the framework of the project will serve this goal, namely summer/winter schools, conferences, guest lecturing, joint scientific research work. At the same time, the project will allow students from both sides to benefit from the cooperation, since it gives them more opportunities for better education, for scientific research under the co-supervision, for attending lectures on "hot topics".

Expected results

B.3.1.3 Please describe what results are expected to be achieved through successful implementation of the project

There are short- and long-term results of the project. First, an agreement between the UiO and KPI, UNU, and DNU on cooperation in education and scientific researches will be signed which will serve a base for long-standing relations between the Universities.

Second, the requirements of the Bologna system as well as research-oriented mathematical courses will be implemented at the partner universities in Ukraine including new courses, new teaching methods based e.g. on adaptive e-learning systems directed towards enterprises in the public and private sectors. The most important impact of the project to the mathematical education in Ukraine is related to more applied nature of courses which will teach the Norwegian professors in the field of actuarial and applied mathematics. This is an important point in view of a new curricula on Actuarial and Finance Mathematics introduced in KPI since September 1, 2016. The courses combined with some others, even more applied, given by other partners of the project will create a sustainable base for teaching topics

required by labor market in Ukraine. It is also worth mentioning that new teaching technologies offered by Studix and to be implemented by Ukrainian colleagues will help to transform the educational system in Ukraine to a modern form (including online courses, tests etc.). Joint courses of lectures on "hot topic" like statistical machine learning designed by Professors from both countries will also be appreciated by students from both countries. The courses offered by Ukrainian colleagues are of more fundamental nature which could also supplement the mathematical skills of Norwegian students. The co-supervision of students by Professors from both countries will lead to variety of student theses, both theoretical and applied.

Third, a sustainable framework for student and staff mobility will be created. This is achieved by intensive program of exchanges at all levels including Bachelor, Master, PhD. Participation in Summer/Winter schools will extend the student knowledge of various subjects of modern mathematics, while, during the conferences, the students may discuss their results and pose questions to experts in the fields of interest. The meeting, both schools and conferences, will be organized twice a year during the project and thus students will be in a constant contact with Professors from participating Universities. Norwegian students will travel 36 short term visits and a total of 4 months divided into longer stays in Ukraine. Ukrainian students will travel 50 shorter trips to Norway in addition to 6 long term stays for bachelor/ master students and 4 months divided into longer stays for phd students. Norwegian staff travel 18 shorter trips and a total of 8 months divided into longer stays in Ukraine. Ukrainian staff will travel 18 shorter trips and a total of 8 months divided into longer stays in Ukraine.

Fourth, more students from Norway will learn about and profit from the Ukrainian experience or tradition of solving of advanced

mathematical problems e.g. in view of Olympiads in Mathematics, working at problems in groups, preparing collective reports on the methods used and results obtained when working together on a problem. Planned in 2018 the training camp in Kiev will involve students from both countries and, if finds positive feedback from participants, will be repeated in the next year (the training camp in 2019 is not a part of budget; we will search for another financial source if needed).

Among the results of the project we also mention scientific cooperation between mathematicians of both countries. Some of them are already established, others are under discussion, and there are more to be initialized in the framework of the project. The new scientific relationships, say application of Item response Theory for analyzing the result of tests, will be of interest for both countries and can successfully be used in the teaching process. The joint scientific research work will be done through mutual visits and participation in conferences organized in the framework of the project.

The results of the project will be disseminated widely, in particular during the summer/winter schools and conferences which should be international (preliminary, some Universities from Georgia, Germany, Hungary, Lithuania, Moldova and Poland are interested to participate).

The results of the project will last longer then the life time of the project on base of the courses adapted by Professors of another country. The most market oriented program of mathematical education in Ukraine, which is one of the priorities of the education announced by Ministry of Education and Science of Ukraine, will be supported private sector that will hopefully lead to more interests of enterprises in results of the education in Ukraine.

Finally, we provide some additional information on how the new courses are to be integrated in regular study programme:

One of our proposed courses (i.e. "Stochastic (functional) differential equations with applications") will be jointly developed by the partners.

Other courses will be offered or developed separately and just disseminated to the partners as e.g. Norway:

Oslo

.....

- 1. Rough path theory (with applications to SPDE's or finance)
- 2. Stochastic control theory (with applications to finance)
- 3. Interest rate modeling via SPDE's
- 4. Mathematical finance
- 5. Construction of risk measures
- 6. Life insurance and finance
- 7. non-life insurance
- 8. Backward stochastic differential equations (and applications)

9. credit risk

Ukraine:

Courses from Kiev:

1. Regularly varying functions in probability and statistics

- 2. Regular variation for ODE and SDE
- 3. Stochastic flows
- 4. Levy processes
- 5. Markov processes and chains with applications
- 6. Ergodic properties of solutions of SDE
- 7. Limit theorems for random fields
- 8. Extremes and records
- 9. Filtration, interpolation and prediction for random processes
- 10. Randomized algorithms
- 11. Probability theory and cryptography

Courses from Uzhgorod and Vinnitsa/Donetsk:

12. Gaussian random processes

13. Random series and wavelets

14. Modern theory of limit theorems

Here we mention that the course on "Probability theory and machine learning" will be coordinated with employees of the partner company Studix, which could offer a seminar series on applications in elearning (e.g. in the frame of a winter or summer school) in Ukraine and Norway.

A selection of the above mentioned courses depending on the demand and interests of the students are planned to be given in form of compact courses (1-2 weeks), guest courses or lectures (1-3 months) at the partner universities and in the frame of winter and summer schools.

An over-extensive and costly reorganization of the study programmes will not be necessary or will be avoided, if the above mentioned courses are offered as compact courses, guest lectures or by means of winter or summer schools.

However, we may e.g. in the case of the course "Probability theory and machine learning" (with applications to e-learning) establish a regular master course, which gives rise to a long-term teaching cooperation of both sides.

Туре	From	То	Number of travelers	Duration	Level	Total grant
Long-term (3 months or more)	Ukraine (UA)	Norway (NO)	6	6m, 0w, 0d		0
bachelor/maste	r- level. 6 stude	nts from Ukraine	will stay one seme	ster each in Os	lo during the p	roject
Short-term (up to 3 months)	Norway (NO)	Ukraine (UA)	10	0m, 1w, 0d		0
master/phd -lev	el Summer/wint	er school Ukraine	2017			
Short-term (up to 3 months)	Norway (NO)	Ukraine (UA)	10	0m, 1w, 0d		0
master/phd -lev	el Summer/wint	er school Ukraine	2019			
Short-term (up to 3 months)	Norway (NO)	Ukraine (UA)	4	0m, 1w, 0d	Master	0
Training camp I	pefore internatio	nal mathematical	competition 2018			
Short-term (up to 3 months)	Norway (NO)	Ukraine (UA)	10	0m, 1w, 0d	Master	0

B.3.1.4 Student mobility

Master student	s visiting superv	isor in the partner cou	intry 1-2 weeks	seach student		
Short-term (up to 3 months)	Norway (NO)	Ukraine (UA)	4	1m, 0w, 0d	PhD	0
Phd students vi	isiting partner fo	r research cooperatio	n			
Short-term (up to 3 months)	Norway (NO)	Ukraine (UA)	12	0m, 0w, 5d	PhD	0
Participation in	project conferen	nce in Kiev 2018				
Short-term (up to 3 months)	Ukraine (UA)	Norway (NO)	20	0m, 1w, 0d		0
master/phd-leve Summer/winter	el school in Norwa	ay 2018				
Short-term (up to 3 months)	Ukraine (UA)	Norway (NO)	12	0m, 0w, 5d	PhD	0
Participation in	project conferen	nce in Oslo 2019		4		
Short-term (up to 3 months)	Ukraine (UA)	Norway (NO)	4	1m, 0w, 0d	PhD	0
Phd students vi	isiting partner fo	r research cooperatio	n			
Short-term (up to 3 months)	Ukraine (UA)	Norway (NO)	10	0m, 1w, 0d		0
Master students	s visiting superv	isor in the partner cou	intry 1-2 weeks	each student		
Total			102	44m, 64w, 120d		0

Travel summary

	NO	UA	
Long-term (3 months	s or more)	
Ukraine (UA)	6		
Short-term (up to 3 n	nonths)		
Norway (NO)		50	
Ukraine (UA)	46		
Course name: Course code/ID:			Stochastic (functional) differential equations with applications
Description:			Academic content:
			- Introduction to (functional) stochastic differential equations (e.g. delay equations) driven by Brownian motion or semimartingales
			- Discussion of applications to finance, insurance, biology and physics
			target groups: master students, Phd-students in mathematics, statistics an other fields (e.g. physics).
			estimated number of participants: 20
Level:			Master
Fields of education an ISCED F2013:	d training	-	Mathematical sciences
Language of teaching:	:		English
ECTS Credits (or simi	lar):		10,00
Start:			2018/2019
Awarding institution(s) Will the programme qu): Ualify for a	n	UA-National Technical University of Ukraine - "Kyiv Polytechnic Institute"
academic degree (Bad or PhD)?:	chelor, Ma	ster	No

Work plan

B.3.2.1 Please provide a brief work plan for the project.

The activities planned in the project are student and staff mobility, Summer/Winter schools, scientific conferences, training camp for preparation teams for mathematical Olympiads. We assume that the coordination of activities will be managed by the joint working group consisting of 2 representatives

of UiO and KPI and 1 representative of UNU and DNU. Annual meeting of the working group at the beginning of each year will summarize the achievements of the preceding year and make plan for the current year, especially as far as the student and staff mobility is concerned.

We plan to organized 3 joint summer/winter schools and 2 scientific conferences. Intensive student and staff exchange is a cornerstone of the project. It is planned that the Summer/Winter schools are to be organized in 2017 at UNU, 2018 at UiO, and 2019 at DNU (in total, 30 students from Norway, 60 students from Ukraine, 24 invited lecturer from both countries). We expect 20 more participants from other countries at every school; these participants will pay for their own participation and will not be part of the budget.

We also plan that the 2018 scientific conference is organized by KPI and 2019 one by UiO. The budget covers the participation of 4 researchers from Ukraine, 4 researchers from Norway, 5 invited lecturers, 12 PhD students from Ukraine, and 12 PhD students from Norway in each of the 2 planned conferences during the project (more may join with funding from other sources).

Guest lecturing at all four partner universities and co-supervision of student dissertations are also planned in the project. It is planned that the detailed schedule prepared by the joint working group will be approved at a coordination meeting right after the project starts. We plan a total of 8 months (long visits) during the project, divided between the Ukrainian staff taking part in the project. For the same purpose, we plan 3 months long visits divided between the Norwegian staff. We plan 2 short stays (1-2 weeks) every year of the project for Ukrainian staff to supervise students and 2 visits for Norwegian staff for the same purpose.

The training camp for solving advanced mathematical problems and preparation of tems for mathematical Olympiads will be organized by KPI in 2018 and involve 8 students from Ukraine and 4 students from Norway (the teaching staff is from KPI and no budget for them is assumed in the project). In case of success, this event will be repeated in 2019 (no budget is assumed in the project for 2019 training camp but the working group will try to obtain a support from other financial sources). The student mobility is assumed at various levels including Bachelor, Master and PhD. The budget covers longer as well as shorter stays of Ukrainian students in Norway and Norwegian students in Ukraine.

B.3.2.2 Please describe how each of the project partners (including any network partners) will contribute to the project.

Each of four partner Universities (UiO, KPI, DNU and UNU) will contribute to each of the activity assumed in the project.

Summer/winter schools will be organized at DNU, UNU, and UiO and scientific conferences will be held at KPI and UiO. Moreover, KPI invites joint Norwegian-Ukrainian teams to participate at Sikorsky Challenge, a competition of startups (see http://startup.kpi.ua/sc2016/en) and at International Summer School on Achievements and Applications of Contemporary Informatics, Mathematics and Physics (see http://summerschool.ssa.org.ua/ and https://vk.com/aacimp).

Every of four participating Universities will provide courses of lectures in English in Ukraine and in Norway for regular students and mobility students coming in the framework of the project. UiO, KPI, DNU and UNU prepared their lists of courses of lectures (11 titles from UoO, 11 titles from KPI, 3 from DNU, and 3 from UNU) to be offered to students. The courses from Norway are of more applied nature, while those from Ukraine are of more fundamental/theoretical nature. In this sense, the courses complement each other. The courses from Norway are directed toward applications in actuarial and finance mathematics (risk measures, interest rate models, credit risk, stochastics of energy markets etc.) are especially invited by Ukrainian Universities in view of a new curricula Actuarial and Finance Mathematics introduced since September 1, 2016. On the other hand, the courses offered by Ukrainian colleagues (such as regular variation in ordinary and stochastic differential equations, randomized algorithms, cryptography, wavelet analysis etc.) may attract students from Norway in view of novelty and obvious applications.

Each of the participating universities will contribute to mobility of students and staff, participating in Summer/Winter schools and scientific conferences organized in the framework of the project, joint scientific research work. The working group to be organized to schedule the activities within the project will consist of representatives of each university (2 representatives from UiO and KPI).

KPI will be responsible for organizing training camps for students from Norway and Ukraine to prepare the teams for participation in Olympiads on Mathematics. Some online role-playing games in the field of financial mathematics will also be organized during the camp period. UiO and KPI agreed to develop several joint courses of lectures and lecture notes for students. All other universities will also prepare proposals on online courses to be developed during the project by using new teaching technologies offered by Studix in Oslo.

These include flexible editors allowing to include into lecture notes Excel sheets to perform necessary calculations, video files exhibiting some phenomena related to the topic of a lecture, and macro links allowing students to browse related materials. Studix will also provide software licenses, co-supervise master and PhD students and give research seminars at our partner universities, which will inseminate the interest of students to work and carry out research field of e-learning and machine-learning. TAS Insurance group strongly supports the idea of introducing new Curricula on Actuarial and Financial Mathematics. As far as possible it will contribute to the project by delivering lectures for students in Ukraine concerning regulations of the insurance activity in the country and for Summer/Winter schools participants on practical calculations in insurance. On the base of a long lasting cooperation, TAS will invite students for internship and practice in the company. TAS will give a presentation in Norway about the insurance market in Ukraine during a summer school (this could be done in a Winter/Summer school or in an event organized by Gambler AS who also is our partner in the project). The actuarial education in Ukraine and in Norway will benefit from an applied course of lectures about insurance calculations designed by TAS together with KPI and UiO.

B.4 Assessment of sustainability, risk and cross-cutting issues

Sustainability

B.4.1 Please explain how the proposed project activities and the effects sought achieved through the project will be sustained and financed after the project period.

The partner universities will sign an agreement on educational and scientific partnership that will serve as a basis for a long term cooperation between the parties. They will find opportunities to finance it even after the project is over. This could be partially done via collaboration with IT-companies like the elearning company Studix in Oslo and with financial institutions or insurance companies (as e.g. Gabler) that will be interested to support master and PhD students in the field of machine learning, finance and actuarial science co-supervised by both parties of the project. The latter will also be to the benefit of a more practically oriented education of the Ukrainian students, which clearly is the strength of our group in Oslo. In this context, we can refer to a list of partners from the Norwegian industry as e.g. Ali Elmasoudi, Eivind Stordal, the e-learning company Studix, Inga Eide, the financial supervisory authority of Norway or Erik Bølviken, Gabler, who will cooperate with us to an extent contingent on the resources and interests of the companies.

The parties will continue supporting their activity by developing joint online courses. To offer online courses certainly contributes to sustainability.

On the other hand, we will apply for funding from the Norwegian or the European research council (e.g. Marie Sklodowska Curie actions) for ensuring sustainability of the project. For example, the innovation of mathematical olympiade competitions in Norway, which is one of the aims of the project, is expected to significantly inseminate the interest in mathematics and natural science among students. The latter is of vital interest for Norway with an enconomy, mainly based on the oil industry. In order to "diversify" the Norwegian "industry portfolio", Norway is forced to further develop its technology sectors as e.g. the software branch, which, however, requires the resolute promotion of the key technology of mathematics and related sciences in education. In view of the latter, we are therefore confident to be able to acquire financial funding for this but also other project goals to ensure sustainability.

B.4.2 Please describe how the project is linked to strategies and priorities of the project partners, and how the project will enhance long-term collaboration between the partners.

The main goals of the project, namely the development of research oriented education, studies directed towards market needs and internationalization of education fully coincide with the priorities of participating universities from Ukraine.

The priorities declared by the Ministry of Education of Ukraine lie in a more research oriented system directed towards market demands and this obviously requires new study programs, new courses, and new teaching methods. Another priority involves internationalization of education including an extended cooperation with Europe in the framework of Bologna process, as well. All these lead to the necessity for Ukrainian professors to make use of teaching experience of their European colleagues, Norwegian colleagues as in the case of this project. Several activities in the framework of the project will serve this goal, namely summer/winter schools, conferences, guest lecturing, joint scientific research work.

The new curricula on Financial and Actuarial Mathematics introduced at KPI since September 1, 2016 (and further to be introduced

in DNU and UNU) is in a complete agreement with the mainstream of topics for teaching courses preselected by UiO. A special benefit from those courses would be their orientation to more applied aspects of the subject.

The new teaching technologies developed by the e-learning company Studix in Oslo is greatly appreciated by all participating Ukrainian universities, since special attention in Ukraine is currently paid to providing online courses and those technologies will essentially improve abilities of the teaching staff in the preparation of lecture notes and online courses in different platforms.

It is very important for Ukraine that DNU will participate in the project, since the University moved to another city in view of dramatic events in the east of Ukraine. Currently, DNU is really needs support for createing a concurrent environment for students and the staff.

Since participating Ukrainian Universities are somewhat equally spread, geographically, other Ukrainian Universities may benefit from the activities in the framework of the project. L'viv, Odessa, Kharkiv, and Dnepropetrovsk (Kropivnytskii) universities will certainly send their students to participate in short term activities of the project.

On the other hand the project fits and relates to overall strategies and priorities of UiO insofar as it fully meets the following objectives:

1. The University of Oslo shall promote pioneering research, education and communication and be sought after as an international partner.

2. The University of Oslo will offer research-based education equivalent to that offered by the foremost international places of learning.

The goals are also in full compliance with the "vision" of the stochastic analysis group in Oslo: to be an internationally leading group in modern insurance mathematics and related fields which also aims at offering a cooperation and discussion forum for the insurance and finance industry on the basis of regular meetings at UiO to exchange ideas and practical experience and to inseminate innovative joint research in e.g. risk analysis and risk management of insurance companies in Norway and abroad. In order to strengthen the international relationships we also persue to further develop student exchange programmes in insurance and finance to enable our students to acquire academic degrees and valuable working experience in cooperation with leading universities and companies abroad. The project will certainly strengthen the existing cooperation by involving much more Master and PhD students as well as Professors from both universities in the exchange scheme. This also concerns the scientific links between scientists from both countries. The parties will involve colleagues from other countries (Sweden, Denmark, Iceland and Baltic countries in the first place) to join the conferences organized in the framework of the project and continue the Scandinavian-Ukrainian conferences held in Uzhgorod, Umeå and Kiev in the 1990th. We will try to involve experts from those countries to support the activities of the project (in particular, in the framework of the program Erasmus+).

In this context we shall also mention that the project will contribute to the strengthening of collaboration insofar as each institution supplements the skills of the other: The education of the UiO group is pratically oriented in the education, whereas the group from Ukraine has its strength in the mathematical theory. The combination of both paves the way for synergy effects to the benefit of the project participants. The successful realization of the project will tighten the links to the public and private institutions, which will serve as a basis for a long-lasting cooperation.

B.4.3 Please explain how and to what extent the project will lead to increased mobility of students between the partner institutions.

Students are a target group for the project and a support of student mobility is a key ingredient. Student mobility is assumed at all levels, namely Bachelor, Master, and PhD. Students will have an option to choose whether they come to a partner country for a short or long term period (funding for both is planned in the budget). Other possibilities for students who will take part in the project are to attend Summer/Winter schools and conferences (which also will be supported by using the budget of the project). The advantage of Summer/Winter schools, compared to regular university courses, is that students are offered the opportunity of getting orientation and an overview of "hot" research topics by means of brief introductions to various fields. Scientific conferences are also attractive for students, since here they can get a feedback on their scientific research work from several people. Students who are interested in advanced studies and who wish to participate in Olympiads on Mathematics or

Programming or in Sikorsky Challenge for startups are welcome to attend training camps to be organized in the framework of the project.

Those and other students may participate in Sikorsky Challenge competition or International Summer School on Achievements and Applications of Contemporary Informatics, Mathematics and Physics or in Olympiads on Mathematics or Programming also in longer term, since they are organized by KPI regularly. The project will encourage and promote students to take part in those events as well as in other similar ones and to further develop their skills and creativity at national and international levels as well as to improve their knowledge of modern advanced methods in mathematics in the first place. Norwegian and Ukrainian colleagues will pay special attention to the co-supervision of PhD students. For those students high mobility is often an important issue- also beyond the project end. Both sides will try to find other financial sources to support those students after the end of the project.

Risk assessment

B.4.4 Please describe potential risk factors that may impede successful implementation of the project, and how the effects of such risks may be mitigated.

The construction of the "working group" will also help to address any risks, by yearly meetings and more people involved from each partner, the project does not rely on one or two people for success. One of the risks in the implementation of the project may pertain to the number of bachelor/master students from Norway who will be able to participate in courses in Ukraine. It is conceivable that the number of students from Norway will be considerably lower than that from the Ukrainian side. In order to compensate for this risk exposure we will organize informal seminars in Oslo for the advertisement of the exchange programme by e.g. emphasizing the exceptional international scientific reputation of the research groups from Ukraine and collaborating countries. On the other hand, one may also hint at the gaining importance of eastern European countries as economical, political and cultural players in Europe or even at a global scale. It is expected that the latter aspect will yield dividends for those students who will be involved later on in business activities with partners from eastern European countries. Here the acquired knowledge of the culture and the "mentality" of the partners could be a meaningful confidence building measure for further collaboration. Furthermore, in order to compensate for such a risk, we may also increase the number of PhD students from the Norwegian side, who will definitely profit from the outstanding scientific reputation of the research groups in Ukraine and their worldwide network in probability theory and mathematical analysis.

Another risk we can identify are time constraints with respect to the teaching obligations of the scientific staff of both sides of the project. For example, courses designed for a whole semester may be cancelled due to unforesightful circumstances (illness or other reasons). In this case, one may offer crash or compact courses instead or postpone the courses, if feasible. On the other hand, since the number of project participants on both sides is comparatively high, we may expect volunteering staff members who wish to step in for colleagues regarding courses or supervision of students. The latter reasoning also applies to risks arising from the organization of conferences by the organizing committees.

We cannot identify riks arising from lingual or cultural barriers. The courses are supposed to be offered in English. All staff members and students have a solid command of English.

Cross-cutting issues

B.4.5. Please describe how aspects relating to gender perspectives, gender balance and gender equality have been assessed and, if relevant, implemented in the project.

Women and men are equally represented in the team of participants from NTUU KPI. The same principle will be followed when organizing the exchange program for students.

In fact, we have fewer female students than male students in mathematics in Norway. It is therefore important to recruit more female students by e.g. establising a network specifically between female students, using female professors as role models.

B.4.6 Please describe briefly what measures will be taken to ensure that corruption or mismanagement of funds does not take place in the project.

The working group of the project will consider all the cases of mismanagement, if any, and make a decision (agreed with SiU if necessary) on how funds have to be reallocated between the activities. However, the interest to the activities assumed in the project seem to be higher than funds allowed by the granting organization and one of the duties of the working group would be on how to extend financing of the activities through other financial sources.

The corruption in Ukraine seems to be a problem widely discussed in the society but no event of this kind is expected at any of the participating Ukrainian Universities. Moreover, the most of the project money will be available at UiO and thus any irregularity in the project is excluded at all.

The spending in Ukraine will need to be reported to UiO before each report UiO send to SIU. This will be regulated by an agreement between our two universities. KPI will be responsible for all the Ukrainian partners.

D - Project activities and budgetary allocations

D.1 Project development

Project development

Name:	Yearty meetings - project group								
Activity:	International project meetings	International project meetings							
Description: To make sure that the project is fulfilling its goals and that progress is satisfactory working group will meet once a year to go through the progress, preparing reports and plan coming activities. The working group consist of the two project leaders, / Yu. Pilipenko and one administrative aid from each partner. For each meeting the group will invite up to two more participants to the meeting - this will be other staff needed for evaluation of the progress and planning of the coming year.									
Start:	Jan/2017								
End:	Dec/2019	Dec/2019							
Participants:	6								
Budget:									
NOK - Norwegian krener		dget 2017	Budget 2018	Budget 2019	Sum				
Activity									
Travel and accommodation		12 000	24 000	12 900	48 000				
Meeting coets	· · · · · · · · · · · · · · · · · · ·	3 000	3 000	3 000	9 000				
Other		0	1 400	0	1 400				
SUM - Activity		15 000	28 400	15 900	58 400				
SUM - Total		15 990	28 400	15 000	58 400				
Comments:	The working group will have two participants from UiO, two from KiP and one particpant from each of the other two Ukrainan partners. The meeting in 2017 and 2019 will be held in Ukraine, in 2018 in Oslo. The buget will cover travel and stay for the visitors travelling to the meeting. In addition the budget will cover one lunch and one working dinner for the project group taking part in the meeting. Travel Kiev-Oslo is estimated to 3000 NOK (includes plane ticket + any travel to/from airport). We also include visa+ insurance cost for the Ukrainian visitors, 350 NOK per person per trip.								

D.2 Implementation of educational activities

Implementation of joint educational activities

Name:	Summer school/Winter school - Norway
Activity:	Intensive courses, field courses and summer schools
Description:	2 Summerschools/winterschools in Ukraine, one in Norway during the project period.For each school, we assume 20 participants from Ukraine, 10 participants from Norway + 20 participants from other countries (these participants will pay for their own participation and will not be part of the budget).
	The summer/winterschools will not have any exams, and will not yield any ECTS- points.
Start:	Jan/2018
End:	Dec/2018
Level:	PhD
Participating students:	50
Participating faculty:	8

ECTS:

Budget:

NOK - Norwegian trener	Budget 2017	Budget 2018	Budget 2019	
Activity				
Travel and accommodation	0	312 000	0	312 000
Venue and local transport	•	0	0	0
Student scholarships	•	0	0	0
Other	0	9 800	0	9 800
SUM - Activity	•	321 800	•	321 800
SUM - Total	•	321 800	•	321 800

Comments:	The summer/winterschool will be relevant for both Master- and PhD-students from Norway and Ukraine. We will also open the school for participants from other countries. These participants will pay for their own participation. The lectures will be given by staff at the partner institutions and we also plan to invite guest speakers from private sector (for example actuarial businesses) in both Ukraine and Norway.
	For each school the budget includes 20 participants from Ukraine, 10 participants from Norway and 8 invited lecturers. This is an excellent opportunity to show the Ukrainian participants other parts of Norway, so the school will not be held in Oslo. Due to this fact, travel costs will be a bit higher than for Oslo-Kiev-trips.
	For each Ukranian participants: Travel (approx 5000 NOK), accommodation and meals (approx 4000 NOK) For each Nonvegian participant: Travel (approx 2000 NOK), accommodation and
	meals (approx 4000 NOK).
	For each lecturer: Travel (approx 5000 NOK), accommodation and meals (approx 4000 NOK) We also include expences for visa and insurance for all Ukrainian visitors and lecturers (the nationality of the lecturers are not yet decided): approx 350 NOK per person per trip
lame:	Summer school/Winter school - Ukraine
Activity	Intensive courses, field courses and summer schools
Description:	2 Summerschools/winterschools in Ukraine, one in Norway during the project period. For each school, we assume 20 participants from Ukraine, 10 participants from Norway + 20 participants from other countries (these participants will pay for their own participation and will not be part of the budget). The summer/winterschools will not have any exams, and will not yield any ECTS- points.
Start:	Jan/2017
-nd	Dec/2019

End:Dec/2019Level:PhDParticipating students:50Participating faculty:8ECTS:ECTS:

Budget:

NOK - Norweglan kroner	Budget 2017	Budget 2018	Budget 2019	Sum
Activity				
Travel and accommodation	214 000	0	214 000	428 000
Venue and local transport	•	0	0	0
Student scholarships	0	0	0	0
Other	0	0	0	0
SUM - Activity	214 000	0	214 000	428 000
SUM - Total	214 000	0	214 000	428 000

Comments:

The summer/winterschools will be relevant for both Master- and PhD-students from Norway and Ukraine. We will also open the school for participants from other countries. These participants will pay for their own participation. The lectures will be given by staff at the partner institutions and we also plan to invite guest speakers from private sector (for example actuarial businesses) in both Ukraine and Norway. For each school the budget includes 20 participants from Ukraine, 10 participants from Norway and 8 invited lecturers.

The school in 2017 is planned to be hosted by UNU, and in 2019 by DNU. For the Ukranian summer/winterschools, we assume these costs: For each Ukranian participants: Travel (approx 1000 NOK), accommodation and meals (approx 3000 NOK) For each Norwegian participant: Travel (approx 4000 NOK), accommodation

	and meals (approx 3000 NOK). For each lecturer: Travel (approx 5000 NOK), accommodation and meals (approx 3000 NOK)					
Name: Activity: Description: Start: End: Level: Participating students: Participating faculty: ECTS:	Staff mobility Norway -> Ukra Joint teaching and supervisio Staff will travel from Norway (PhD- and Master-students. T weeks) and longer stays (1-3 Jan/2017 Dec/2019	nine - shorte on incl. gues to Ukraine to The mobility months)	r and longer sta t lecturing o give mini cour will both be sho	iys ses, seminars, c rt trips (1-2	osupervising	
Budget:						
NOK - No	rwegian kroner B	udget 2017	Budget 2918	Budget 2019	Sum	
Travel and accommodation		22 000	22 000	22 000	66 001	
Venue and local transport		0	0	0		
Student scholarships		0	•	0		
SUM - Activity		23 000	23 000	23 000	69 000 138 AM	
SUM - Total		45 000	45 000	45 000	135 000	
Name: Activity:	the project. (From different pr Staff mobility Ukraine -> Norv Joint teaching and supervisio	oject partici vay - shorte n incl. quest	pants). r and longer sta t lecturing	ys		
Description:	Staff will travel from Ukraine I PhD- and Master-students. T weeks) and longer stays (2-3	o Norway to he mobility (months)	o give mini coun will both be sho	ses, se minars, co rt trips (1-2	osupervising	
Start:	Jan/2017					
End:	Dec/2019					
Level:						
Participating students: Participating faculty: ECTS: Burknet:						
NOK - Nor	rwegian kroner Bu	udget 2017	Budget 2018	Budget 2019	Sum	
Activity						
Travel and accommodation		37 000	47 000	47 000	131 000	
Student scholarships		0	0	0		
Other		9 650	9 850	9 650	28 960	
SUM - Activity		46 650	86 650	56 650	159 950	
Comments:	Longer stays: A total of 8 mor staff taking part in the project. (Ukrainian staff will need sala living costs). We assume that	nths during f The budge ry coverage each perso	the project, divic t will cover trave to be able to si n stays 2-3 mo	led between the el, stay and som tay in Norway du nths. We calcula	Ukrainian e salary e to high	

	Short stays: Travel and stay for 1-2 weeks for staff to supervise students. Travel and stay covered, no salary. We assume 3000 in travel Oslo/Kiev, 4000 to cover accommodation and 4000 NOK to cover diet. We assume two such trips each ye the project. (From different project participants). We also include expences for visa and insurance for all Ukrainian visitors: appro NOK per person per short trip, 950 per person for longer stays.								
Name:	"training camp" and partic	ication in Inter	national mather	natical Competit	ions				
Activity:	Student mobility								
Description:	In preparation for participating in Mathematical Competitions, masterstudents from								
	Likraina and Norway will n	neet and work	on problems to	nether Solving	dvanced				
	problems under supervision of professors. They will then travel together a								
	in the competition		0. 1110j 1111 010	i autor togentor	and anno part				
Start	lan/2018	Jan/2018							
End	Dec/2010								
ERU.	Master .								
Level	Masier								
Participating students:	12								
Participating faculty:									
ECTS:					040				
Budget:									
NOK - Nor	rwegian kroner	Budget 2017	Budget 2018	Budget 2019	Sum				
Activity									
Travel and accommodation		0	210 000	0	210 000				
Venue and local transport		0	0	0	0				
Other		0	3 500	0	3 500				
SUM - Activity		•	213 500	•	213 500				
SUM - Total		0	213 500	•	213 500				
	Competition is not yet known, so we have to assume a price for travel and stay, even though we do not know the location of the competitions in the years to come yet. If this activity is a success, we plan to try to send the same group of students to compete together again in 2019. We will try to find funding for this activity from other sources, so it is not included in the budget. The training camp will be located outside Kiev, so we will assume that all 12 student + 4 professors will need a short trip covered in addition to accommodation and meal We add travel for 4 students and 2 professors from Norway. For participation in competitions we assume 12 students needs travel, accommodation and meals for a week. On average 5000 NOK in travel per person, 5000 NOK in accommodation and meals. We also include visa and insurance for the Ukranian travellers to the								
Name:	bachelor- and master mob	ility Ukraine ->	Oslo						
Activity:	Student mobility	•							
Description:	Scholarship + travel for one semester on average 1 Ukrainian students per semester during the project (total of 6 students during the project)								
01-1	The student mobility to No courses at UiO. (On average the page of	rway will give I ge 30 ECTS p	ECTS point whe oints per studer	en the students (ht per semester)	iollow .				
Stan:	Jan/2017								
End:	Dec/2019								
Level:	Bachelor and Master								
Participating students: Participating faculty:	6								
ECTS: Budget:	30								

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NOK - No	rweglan kroner	Budget 2017	Budget 2018	Budget 2019	Sum
Activity Travel and accommodation		6,000	6.000	6.000	18.00
Venue and local transport		0000	0000		
Student scholarships		100 920	100 920	100 820	302 76
Other		2 500	2 500	2 500	7 50
SUM - Activity SUM - Total		109 420	109 420	109 420	328 260
		100 420	143 420	103 420	329 29
Comments:	We assume each studer The budget includes one student. The numbers us Travel Kiev-Oslo is estin airport). We also include expende	nt will stay one s e travel Ukraine- sed for the scho nated to 3000 N es for visa and in	emester (two s Norway and a s larship is based OK (includes pl nsurance: 1250	tudents per proj 5 months scolar I on the rate of I ane ticket + any NOK per stude	ect year). ship for each Lânekassen. • travel to/from ent per trip.
Name:	Co-supervision Masterst	tudents		and the second second second	
Activity:	Student mobility				
Description:	Travel and stay for 1-2 w country	veeks for the stu	dents visiting s	upervisor in the	partner
Start:	Jan/2017				
End:	Dec/2019				
Level:	Master				
Participating students: Participating faculty: ECTS: Budget:	20				
NOK - Nor	wegian krener	Budget 2017	Budget 2918	Budget 2019	Sum
Activity					
Travel and accommodation		48 000	64 000	48 000	160 000
Student scholarships		0	0	0	
Other		1 050	1 400	1 050	3 500
SUM - Activity		40 050	65 400	49 860	163 500
SUM - Total		40 060	65 400	49 858	163 500
	The average cost for one 5000 NOK accommodati students visiting Ukraine We include expences for trip	e student visit is ion). In reality we than Norway. visa and insura	calculated to 80 assume that t nce for all Ukra	000 NOK (3000 he cost will be a inian students:	NOK travel, a bit less for 350 NOK per
Manual	Dh d as shilling t Marsing a st	M			
	Pho mobility Ukraine -> I	Norway			
Activity:					1 Th 4
Description:	I ravel and stay for the p	na-student a tota	al of 4 months o	luring the project	ct inese 4
04-4	months are divided betw	een amerent Ph	D-Students.		
Start					
End:	Dec/2019				
Level:	PhD				
Participating students:					
Participating faculty:					
ECTS:					
Budget:					
NOK - Nor	wegian kroner	Budget 2017	Budget 2018	Budget 2019	Sum
Activity					
Venue and local transport		0	000	5 000	5 600
Student acholarships		0	\$2 000	32 000	64 000
Other		0	1 100	1 100	2 200
SUN - Activity SINI - Totel		•	39 100	36 100	76 200
euni · fulli		9	39 100	36 100	75 200
Comments:	We assume each PhD-si roundtrip Ukraine-Norwa is based on the rate of R plane ticket + any travel	tudent will stay 1 y and scolarship CN. Travel Kiev to/from airport).	-2 months. The b. The numbers -Oslo is estimal	budget include used for the sc ed to 3000 NO	es one travel holarship K (includes
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	We also include expences for visa and insurance: 550 NOK per student per trip					
Name:	Phd-mobility Norway ->	Ukraine				
Activity:	Student mobility					
Description:	Travel and stay for the phd-students a total of 4 months during the project These 4 months are divided between different PhD-students. Travel + scholarship covered.					
Start:	Jan/2017					
End:	Dec/2019					
Level:	PhD					
Participating students:	1112					
Participating faculty						
ECTO						
Euro. Budget						
Dudyet.		Dudant 0047	Dudant 9848	Durdent 9940		
Activity	wegian aroner	Budget 2017	Budget Avia	Budget 2413		
Travel and accommodation			6 000	3 000	9 000	
Venue and local transport		9	0	•	0	
Student scholarships		•	32 000	32 000	64 000	
SUM - Activity			38 800	36 000	73.000	
SUM - Total	are and the second s		38 000	36 000	73 000	
Nemo	is based on the rate of R plane ticket + any travel	is based on the rate of RCN. Travel Kiev-Oslo is estimated to 3000 NOK (includes plane ticket + any travel to/from airport).				
Name:	Conterence - Norway					
Activity:	Workshops and seminar	8				
	give the PhD-students an excellent opportunity to build a network of international contacts in their research field, and also be included in presenting results for a research audience.					
Start	Jan/2019					
End:	Dec/2019					
Level:						
Participating students:					· · · · ·	
Participating faculty:						
ECTS:						
Budget:						
NOK - Nor	wegian kroner	Budget 2017	Budget 2018	Budget 2019	Sum	
Activity Travel and accommodation				152 000	462 000	
Venue and local transport		0	0	40 000	40 600	
Student scholarships		0	0	0	0	
Other		0	0	42 600	42 600	
SUN - Activity		0		234 600	234 600	
aom - Iotai			•	234 000	234 000	
Comments:	Each conference will have approx. 100 participants (paying for their own participation). For each conference, we assume some money to pay for the location (seminarrooms, lecture hall) and travel and stay for 5 speakers. We also include travel and stay for 4 researchers and 12 phd/postdocs from each					
	country (N+U) Venue and management For each speaker: travel	of the conferent 4000 NOK + A	ce: 40 000 NOK	and diet: 5000 N	ок	
	For each researcher and and diet: 5000 NOK For each researcher and conference dinner) We also include visa and	student from U student from N	kraine: travel 30 orway: diet: 100 Il Ukrainian visit	00 NOK + Accor 0 NOK (lunches ors and invited s	mmodation + peakers:	
Name [.]	350 NOK per person					
	Jonnoronog - Origing					

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Start:	Workshops and seminars The project will arrange two conferences: One in Ukraine, one in Norway. This will give the PhD-students an excellent opportunity to build a network of international contacts in their research field, and also be included in presenting results for a research audience. Jan/2018 Dec/2018				
End:					
Level:					
Participating students:					
Participating faculty:					
ECTS:					
Budget:					
NOK - Nor	weglan krener	Budget 2017	Budget 2018	Budget 2019	Sum
Activity					
Travel and accommodation		0	152 000	•	152 000
Venue and local transport		0	40 000	0	40 900
Student scholarships		0	0	0	•
Other		0	37 000	0	37 000
SUM - Activity		•	229 000	•	229 000
BUN - Total		•	229 000	•	229 000
	Each conference will have approx. 100 participants (paying for their own participation). For each conference, we assume some money to pay for the location (seminarrooms, lecture hall) and travel and stay for 5 speakers. We also include travel and stay for 4 researchers and 12 phd/postdocs from each country (N+U) Venue and management of the conference: 40 000 NOK For each speaker: travel: 4000 NOK + Accommodation and diet: 5000 NOK For each researcher and student from Norway: travel 3000 NOK + Accommodation and diet: 5000 NOK For each researcher and student from Ukraine: diet: 1000 NOK (lunches + conference dinner)				

Collaboration with enterprises in the public and private sectors

Name:	research projects in connect	ion with e-lea	arning technolog	gies		
Activity:	Facilitation of student involvement in R&D projects and/or involvement of private or public enterprises in student projects Over the contract period students (5) will be offered research projects on problems in e-learning technologies and machine learning in connetions with Studix and the participating universities. Such projects, which may be part of master or PhD theses, will be supervised by employees of Studix (2) and the participating universities (3). Sep/2017 Sep/2019 Master and PhD 5					
Description:						
Start:						
End:						
Level:						
Participating students:						
Participating faculty:						
Budget:						
NOK - Norwegian kroner		Budget 2017	Budget 2018	Budget 2019	Sum	
Activity						
Travel and accommodation		0	0	0		
Venue and local transport Student scholarships Other Stillt - Activity		0 0 0	0 0 0	0		
				0	-	
				0		
SUM - Total		•		•		
Comments:				2		
Name:	seminars on e-learning technologies by Studix					
Activity:	Guest lecturing, workshops and seminars involving lecturers, supervisors or advisors					
	from the public or private sector					
	·····					

Description: Start: End: Level: Participating students: Participating faculty: Budget:	It the partner unit kraine will be giv The objectives of eveloped by Stud ch projects in the r and PhD project re purpose of the	versities en by if these ix in courses fields of e- ts stimulated			
MOK - Nor	wegien troper	Budget 2017	Budget 2018	Budget 2019	Sum
Activity	wegian working	Dudget Avit	Dugerate	Dudget Atte	
Travel and accommodation		0	0	0	0
Venue and local transport		0	0	0	0
Student scholarships Other SUM - Activity SUM - Yotel		0	0 0 0	0	0
		0			
		•	0	0	0

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E - Budget					
NOK - Norwegian krener	Budget 2017	Budget 2018	Budget 2019	Sum	
Collaboration with enterprises					
Facilitation of student involvement in R&D projects and/or involvement of private or public enterprises in student projects - research projects in connection with e-tearning technologies	0	0	0	0	
Guest lecturing, workshops and seminars involving lecturers, supervisors or advisors from the public or private sector - seminars on e-learning technologies by Studix	0	o	0	9	
SUM - Collaboration with enterprises	•	0	•	0	
Implementation of educational activities					
Intensive courses, field courses and summer schools - Summer school/ Winter school - Norway	0	321 800	0	321 800	
Intensive courses, field courses and summer schools - Summer school/ Winter school - Ukraine	214 000	0	214 000	428 990	
Joint leaching and supervision Incl. guest lecturing - Staff mobility Horway - > Ukraine - shorter and longer stays	45 900	45 000	45 900	135 000	
Joint leaching and supervision incl. guest locturing - Staff mobility Ukrains - > Norway - shorter and longer stays	46 650	56 650	56 650	169 950	
Student mobility - "training camp" and participation in International methomatical Competitions	0	213 500	0	213 500	
Student mobility - bechelor- and meeter mobility Ukraine -> Oslo	109 420	109 420	109 420	328 260	
Student mobility - Co-supervision Mesterstudents	49 950	65 400	49 050	163 500	
Student mobility - Phd mobility Ukraine -> Norway	0	39 100	36 100	75 200	
Student mobility - Phd-mobility Norway -> Ukraine	0	38 000	35 900	73 000	
Workshops and seminars - Conference - Norway	0	0	234 600	234 600	
Workshops and seminars - Conference - Ukraine	0	229 000	0	229 000	
SUM - Implementation of educational activities	464 120	1 117 870	779 820	2 361 810	
Project development					
International project meetings - Yearly meetings - project group	15 900	28 400	15 000	58 400	
SUM - Project development	15 000	28 490	15 000	58 400	
Salary and indirect costs					
Salary, remuneration of concultants and indirect costs	146 250	212 590	212 500	571 250	
SUM - Salary and Indirect costs	146 260	212 500	212 500	571 250	
SUM - Total	626 370	1 358 770	1 007 320	2 991 460	

Comments to the budget

Salary is part of the project in two different activites in the project. The total sums are collected in the row "salary and indirect costs" in the table above:

1. Salary is calculated for Ukrainan staff coming for long term visits to Norway to teach and supervise. This is due to the fact that Ukrainan staff will not get a salary from their own university when on leave. The higher living costs in Norway is also a contributing factor to this budget post. In total we have calculated 480 000 NOK in salary expenses + social costs in this category. (60 000 NOK per person month for 8 months in total).

2. Salary is calculated both for Ukrainian and Norwegian administrative staff assisting in the management of the project. For the Norwegian staff we use 60 000 NOK per person month, for the Ukrainian staff 6250 NOK per person month. These numbers include social costs, but no overheads for the Norwegian staff, only for Ukranian staff. (Overhead for Norwegian staff is covered by the Norwegian host). One person month is calculated for the Norwegian staff during the project period, five person months are calculated for the Ukrainan staff.

The project has three Ukrainian partners, we therefore claim a budget staying below the limit of 3 000 000 NOK quoted in the call for proposals. (The sum spent on student mobility is above 600 000. Student mobility may be found as an integral part of most of the project activities. See "mini budgets" for each activity for details.)

The two project leaders (Prof. Proske and Prof. Klesov) will be responsible for most of the scientific administration of the project, follow up of project activities etc.

We suggest using up to 480 000 NOK to cover salary for long term guests from Ukraine to Norway. This is approx 16% of the total budget. This salary will make it possible for Prof. Klesov and one or two of his collegues to spend time with Prof. Proske and his group in Oslo to facilitate the administration and follow up of the project activities in addition to research cooperation.

In addition we have calculated 1 month administrativ salary i Norway and 5 months administrative salary in Ukraine. These work months will be spend assisting the two project leaders in facilitating the project activites. (Practical administration, booking hotels, assisting with reporting etc)

At the Institute of Physics and Mathematics, at KPI, they do not pay salary to the staff while abroad. The explanation is that the teaching load must anyway be fulfilled and someone has to substitute the one who is abroad. The substitution should be paid and if they keep paying to the staff who is currently abroad, then this doubles the expenses of the University.

Confirmation

Confirmation

It is hereby confirmed that the Project Coordinator at the Main partner institution in Norway has duly acquainted himself/herself with the terms and conditions of the Contract