

Periodical Report
12 Months of project
implementation

New and Innovative Courses for Precision Agriculture



TIAME



**TASHKENT INSTITUTE OF IRRIGATION AND AGRICULTURAL
MECHANIZATION ENGINEERS (TIAME),
FACULTIES: LAND MANAGEMENT, HYDROMELIORATION, MECHANIZATION**

MR. ILHOM ABDURAHMANOV

Joint Project: Capacity Building in the Field
of Higher Education ERASMUS+ 2018

Co-funded by the
Erasmus+ Programme
of the European Union



1. Project activities – from November 2019 till May 2020



Question: Please, name activities and short description of their deliverables your university implemented so far according to the project work plan.

Please, describe activities and their results specifically for each of the Work Packages (WP1-WP5)

Answer: The university has implemented the following activities (+ short description of their deliverables) according to the work plan:

WP1:

1.1 Review of the current curricula for BA/MSc in target area in PC HEIs. Guideline and plan for revising existing courses.

In total 13 curricula (7 EU and 6 UZ) have been reviewed and 8 TIAME specialists have been involved in the review process.

The following current curricula for BA/MSc in target area in TIAME has been reviewed and we made a plan for revising existing modules:

5313400 – Geodesy and Geoinformatics (BA)

5410700 – Land Cadaster and Land Use (BA)

5450400 – Hydraulic Structures and Use of Pumping Stations (BA)

5A313401 – Geodesy and Geoinformatics (MSc)

5A410701 – Land Use and Management (MSc)

5A230105 – Economics of Agriculture (MSc)

Internal workplan of the project was prepared and approved in the beginning of the project. Moreover a resolution on₂ the project has been signed by the rector of TIAME which includes the tasks, WPs and working group of the project.

1. Project activities – from November 2019 till May 2020



1.2 Agreement and guidelines on instructional strategies BA/MSc curricula design including the use of new Educational Technologies.

It was agreed to update following modules:

Basics of using GIS and RS on the exploitation of the hydrotechnical structure

Geoinformation systems and technologies

It was agreed to develop following new modules:

Remote Sensing Applications

Precision Agriculture

Modern geodetic equipment

Agricultural Flight Technologies

10 teaching/administrative staff involved in the new courses development.

WP2:

2.1 Prepare a set of new core curricula and transferable modules inclusive innovative teaching/ learning facilities; develop syllabi; adopt new curricula and modules on institutional /accredit on national level

The set of documents have being prepared.

Following a new curricula has been established and new/updated modules has been included to this new curricula:

5311200 – Innovative technologies in Remote Sensing of Land Resources

Following modules have been adopted on institutional level:

Geoinformation systems and technologies

Modern geodetic equipment

1. Project activities – from November 2019 till May 2020



2.2 Prepare a set of documentation for PAL and VCR; purchase the equipment incl. software; install the equipment
Documentation of PASO has been prepared. A list of equipment has been prepared. It is ready for tendering.

2.3 Casting criteria for participants and retraining program for academic teachers. Retrain academic teachers in new curricula using innovative teaching/ learning facilities and agreed instructional strategies
A document for selection criteria for teachers has been prepared. 3 master classes organized and 14 teachers have been retrained.

2.4 To update the current BA/MSc curricula/create updated programs in the target area according to the Bologna requirements and the new developments
*Following a new curricula has been established and new/updated modules has been included to this new curricula:
5311200 – Innovative technologies in Remote Sensing of Land Resources*

WP3:

3.1. The Quality assurance strategy/QA Plan of each PC university including internal/external Quality evaluation/reports according to QA Plan

QA Plan of TIAME has been developed and approved. Quality Group has been established and 13 specialists involved in Internal Evaluation Board.

1. Project activities – from November 2019 till May 2020



WP4:

4.1. Project DISS& EXP /communication plan using a Set of Promotional Materials; Dissemination Events, Joint WEB based platform, “NICOPA+” Agreement

Schedule of dissemination events for 2019 and 2020 years has been developed. 16 Dissemination events have been organized so far. The total number of participants of the dissemination events is 730.

A list of Potential employers and a list of non-academic partners and organizations have been formed. In total 13 promotional materials developed.

4.2 Full media coverage of the project activities inclusive developing and maintenance of Joint WEB based platform

The number of media echoes is 12.

WP5:

5.1 Management of the project including Project management online, daily project administration and coordination

1 staff member involved in Management and Coordination who is the Local Project coordinator (Ilhom Abdurahmanov). 2 internal reports (6M, 12M) prepared and submitted.

5.2 Coordination meetings

6 coordination events (meetings) have been organized so far.

10 internal management teleconferences have been organized so far.

2. New Courses development process

Course №	Title of the course	Number of ECTS	Name of the person(s) responsible for development + email	Teachers have completed trainings regarding the course (yes or no/ in EU or at home university)	Estimate the percentage of course description development	Estimate the percentage of lecture notes/ presentations development	Estimate the percentage of course work methodology development (if applicable)	Estimate the percentage of practical/ laboratory work methodology development	Estimate the percentage of content, that is planned to be delivered in English (if applicable)
1	Basics of using GIS and RS on the exploitation of the hydrotechnical structure	4	Prof.Bakiev Masharif, Khojiakbar Khasanov	Yes, at home university	100	80	N/A	80	N/A
2	Geoinformation systems and technologies	9	Sarvar Abdurakhmanov, Uzbekhon Mukhtorov, Otabek Abdisamatov, Abdulla Juraev, Aziz Inamov,	Yes, at home university	100	100	N/A	100	N/A
3	Remote Sensing Applications	4	Zokhid Mamatkulov	Yes, in EU	100	50	N/A	50	50
4	Precision Agriculture	5	Ilhomjon Aslanov, Komil Astanaqulov Mansur Amanov	Yes, in EU Yes, at home university	100	80	N/A	80	80
5	Modern geodetic equipment	5	Sarvar Toshpulatov Utkir Islomov Aziz Inamov Anvar Pardaboev	Yes, at home university	100	100	N/A	100	N/A
6	Agricultural Flight Technologies	5	Aziz Inamov	Yes, at home university	50	100	N/A	100	N/A

3. Curricula descriptions



Prepare curricula descriptions (CD) for each updated course and upload to:
<https://1drv.ms/u/s!As2qwyIL4xyxiVWTn00pWgbPHIHR?e=T5bTOw>

Prepared and uploaded

Prepare curricula descriptions (CD) for each new course and upload to:

<https://1drv.ms/u/s!As2qwyIL4xyxiVWTn00pWgbPHIHR?e=T5bTOw>

Prepared and uploaded

4. Teaching materials



According to the working plan, all target universities should develop digital versions-drafts (.doc files) of their OWN manuals/textbooks/ methodological recommendations for students and teachers. Upload the digital version to:

<https://1drv.ms/u/s!As2qwylL4xyxjD53yKNjXi5C3lLv?e=ucjf20>

Uploaded

TIAME
The European Institute of Innovation and Technology

NICOPA
Network of Institutes for Co-operation in Professional Activities

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of the European Union

С.А.Томпжаатов, Ғ.П.Исмомов, А.Н.Инамов, А.П.Парадобов

ЗАМОНАВИЙ ГЕОДЕЗИК АСБОБАЛАР

UDK 528.39. [528.2/.5]
S.A.Toshpo'latov, O'P.Islomov, A.N.Inamov va A.P.Pardaboyevlar zamonaviy geodezik asboblar fanidan darslik. Toshkent. 2020-253. bet

Ushbu o'quv qo'llanma TIQXMMI Ilmiy-kengashining 2020 yil "25" iyuldagi 10-sonli majlisida ko'rib chiqildi va chop etishga tavsiya berildi.

O'quv qo'llanma ERASMUS+ dasturining "NICoPA: Aniq (koordinatali) qishloq xo'jaligi uchun yangi va innovation kurslar" loyihasining bevosita ko'magida nashrga tayyorlandi.

Аннотация
Ushbu darslik 5313400 "Geodeziya va geoinformatika" ta'lim yo'nalishi talabarlari uchun mo'ljallangan bo'lib, unda talabalar uchun elektron taxometrlar, raqamli nivelirlar, yer usti lazerli skanerlar va dronlarning tuzilishi hamda iltihash prinsiplari, ularni tekshirish ushlabi bayon qilingan. Bundan tashqari sun'iy yo'lshob navigatsiya tizimida ishlatiladigan antenalar, sun'iy yo'lshob geodezik apparatlari bayon etilgan.

Аннотация
Enot uchbebnik prednazachen dlya studentov spetsialnosti 5313400 - «Geodeziya i geoinformatika», v kotroye opisanyatsiya proyektirovaniye i ekspanatsiya elektronnykh taxometrov, sifrovnykh urovney, povnerchnostnykh lazernyykh skaneroy i dronov, a takzhe metoda iz testirovaniya. Takzhe opisany anteny, ispolzovaniye v spritnikovnykh navigatsionnykh sistemax, apparature sputnikovoy s'emki.

Annotation
This textbook is intended for students of 5313400 - "Geodesy and Geoinformatics", which describes the design and operation of electronic taximeters, digital levels, surface laser scanners and drones. It also describes the antennas used in satellite navigation systems and satellite surveying equipment.

Taqirzchilar:
A.Babajanov - TIQXMMI "Yerdan foydalanish" kafedrasit mudiri, dotsent, I fa
O.Allanazarov - TDTU "Markahaydrik ishi va geodeziya" kafedrasit dotsent

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С.Н.Абурахмонов, Ғ.Б.Мухторов, О.С.Абдусаматов, А.Ю.Жураев, А.Н.Инамов

ГЕОАХБОРОТ ТИЗИМ ВА ТЕХНОЛОГИЯЛАРИ

UDK 528. 46. [575.1.92]
С.Н.Абурахмонов, Ғ.Б.Мухторов, О.С.Абдусаматов, А.Ю.Жураев ва А.Н.Инамов геоахборот тизим ва технологиялари фонидан ўқув қўламаня. Ташкент. 2020-200. бет

Ушбу ўқув қўламаня TIQXMMI институти Илмий-кengashining 2020 йил "28" майдаги 9-сонли мажлисида кўриб чиқилди ва chop etishga tavsiya berildi.

Ўқув қўламаня ERASMUS+ дастурининг "NICoPA: Aniq (koordinatali) қишлоқ хўжалиги учун янги ва innovation курслар" лойиhasining bevosita ko'magida nashrga tayyorlandi.

Аннотация
Ушбу ўқув қўламаня 5410700 - "Ер кадастри ва ердан фойдаланиш" тизим йўналиши талабалари учун мўлажалланган бўлиб, unda талабалар учун қўрсатмалар, геоахборот тизимини яратиш, рақамли картография асослари, фазовий маълумот моделлари, фазовий маълумотларни визуаллаштириш, маълумотларни фазовий тасвир қилиш, векторли карталарни яратиш ҳамда дастурлар тўғрисидаги каби масалалар ёритиб берилган.

Аннотация
Учебное пособие предназначено для студентов по специальности 5410700 - «Земельный кадастр и землепользование». В учебном пособии рассматриваются создание географических информационных систем, основы цифровой картографии, модели пространственных данных, визуализация пространственных данных, пространственный анализ данных, создание векторных карт и программного обеспечения.

Annotation
The manual is intended for students in the specialty 5410700 - "Land Cadastre and Land Use". The training manual covers the creation of geographical information systems, the basics of digital cartography, spatial data models, spatial data visualization, spatial data analysis, the creation of vector maps and software.

Taqirzchilar:
Қ.Рамонов - TIQXMMI "Давлат кадастрлари" кафедраси mudiri, dotsent, т.ф.и
Ж.Замбарбаев - "Картография" ДИИҚ Қишлоқ хўжалиги карталари фониди mudiri

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4. Teaching materials

*Please, fill in the information about **each** of the teaching materials:*

TEACHING MATERIALS				
No	Title of the materials	Type (manuals/text books/ methodological recommendations)	Short description	Estimated date of the development of the digital versions-drafts (.doc files)
1	Basics of using GIS and RS on the exploitation of the hydrotechnical structure	textbook/ methodological recommendation	This course forms the skills for selecting and applying new methods and new practices in hydrotechnical structures and their exploitations.	31.08.2020
2	Geoinformation systems and technologies	textbook	This course aims at remote sensing and digital image processing knowledge, techniques and skills for getting information from imagery and ability to solve complex tasks based on remote sensing.	completed
3	Remote Sensing Applications	methodological recommendation	This course aims at remote sensing and digital image processing knowledge, techniques and skills for getting information from imagery and ability to solve complex tasks based on remote sensing.	31.08.2020

4. Teaching materials



*Please, fill in the information about **each** of the teaching materials:*

TEACHING MATERIALS				
No	Title of the materials	Type (manuals/text books/ methodological recommendations)	Short description	Estimated date of the development of the digital versions-drafts (.doc files)
4	Precision Agriculture	manual	The main purpose of the course "Precision Agriculture" is to study new challenges of agriculture and using new technology and software's application to modeling futures farmers and land users.	31.08.2020
5	Modern geodetic equipment	textbook	This guide covers the structure of electronic geodetic instruments, methodological bases and metrological aspects of distance and angle measurements. Adequate, in-depth coverage of the issues of research of electronic geodetic instruments provides information that is useful for users of these instruments, as well as professionals involved in instrumentation.	completed
6	Agricultural Flight Technologies	e-learning/Moodle	This course equips with the necessary knowledge of engineering work in agriculture, remote sensing, monitoring the growing season of agricultural products and managing the systematic growth of crops, predicting crop yields, working with space images and software belonging to the family of geographic information systems.	completed

5. Quality Assurance of the New Courses



QUALITY ASSURANCE – Courses		
No	Course title	Peer reviewers (Name, position, organization)
1	Basics of using GIS and RS on the exploitation of the hydrotechnical structure	1. A.Inamov, Associate Professor, TIAME 2. U.Shermanov, Specialist, “Geoinformcadastre” State Unitar Enterprise
2	Geoinformation systems and technologies	1. K.Rakhmonov, Head of department, TIAME 2. J.Egamberdiev, “Cartography” State Scientific Production Enterprise
3	Remote Sensing Applications	1. I.Musaev, Associate Professor, TIAME 2. U.Shermanov, Specialist, “Geoinformcadastre” State Unitar Enterprise
4	Precision Agriculture	1. A.Inamov, Associate Professor, TIAME 2. U.Shermanov, Specialist, “Geoinformcadastre” State Unitar Enterprise
5	Modern geodetic equipment	1. A.Babajanov, Head of department, TIAME 2. O.Allanazarov, Associate Professor, Tashkent State Technical University
6	Agricultural Flight Technologies	1. I.Musaev, Associate Professor, TIAME 2. U.Shermanov, Specialist, “Geoinformcadastre” State Unitar Enterprise

6. Impact and Sustainability



DISSEMINATION EVENTS-1 (THAT ARE NOT MENTIONED IN REPORT 12M/ FROM NOVEMBER 2019 TILL MAY 2020)

No	Question	Answer
1	How many dissemination events were conducted?	3
2	How much and which new dissemination materials were produced (leaflets, brochures, flyers etc)?	<p>➔ Send us prepared/published E-layouts or drafts of brochures and leaflets;</p> <p>➔ Inform us about the dates of approximate printing, publishing and distribution of brochures and leaflets.</p> <p>Sep-Oct, 2020</p>
3	Report on the dissemination of the information about the project in mass media	<p>➔ Send us links or scans/files of <u>publications</u> about the project in mass media: magazines, newspapers, TV, the Internet, etc., with the date of their publications.</p> <p>➔ If they are not published yet, inform us when you are planning to publish them.</p> <p>Sep-Oct, 2020</p>
4	Planned dissemination activities	<p>Please, send us the plan of future dissemination activities until November 2020</p> <p><i>It has been already sent within the report 12M</i></p>

6. Impact and Sustainability



Describe each of the dissemination events:

DISSEMINATION EVENTS-2 (THAT ARE NOT MENTIONED IN REPORT 12M/ FROM NOVEMBER 2019 TILL MAY 2020)

No	Date	Title	Target Audience (list of target groups)	Number of participants	Is there a press-release of the event (YES/NO). If YES, provide it
1	18.02.2020	International Projects related to GIS at TIAME. Obuda University, Hungary	Teachers, BSc students	18	NO
2	04.03.2020	Coordination meeting with Uzbek partner universities, TUIT, Tashkent, Uzbekistan	Teachers, PhD students	15	NO
3	02.06.2020	International GIS in Central Asia Conference – GISCA 2020. Online Conference	Representatives of the HEIs, organizations, industry, teachers, students etc.	190	NO

6. Impact and Sustainability



NON-ACADEMIC PARTNERS (FOUND FROM NOVEMBER 2019 TILL MAY 2020)

№	Question	Answer
1	Please, provide a list of non-academic partners and organizations outside the project, with which you maintain communication and which could be interested in hiring your graduates	<p><u>List of non-academic partners and organizations:</u></p> <p>No changes</p>
2	Please, provide information regarding the planned dissemination events for the interested in the project stakeholders, non-academic partners and organizations outside the project.	<p>➔ <u>Inform us about the planned date of the next event. If the event has already taken place, send us its press release:</u></p> <p>JOINT INTERNATIONAL CONFERENCE InterCarto. InterGIS 26. ANNUAL INTERNATIONAL SCIENTIFIC CONFERENCE ON GEOINFORMATICS – GI 2020, “Supporting sustainable development by GIST”, October 3-5, 2020, TIAME, Tashkent, Uzbekistan http://geo.amk.uni-obuda.hu/gi2020/call.htm</p>
3	University – enterprise agreements	<p>➔ <u>Scan the signed university – enterprise agreements</u></p> <p>Because of Quarantine of Covid-19, it is impossible to send the agreements nowadays. But they will be sent asap.</p>



Thank you for your attention!