

**SUMMER SCHOOL IN GEOINFORMATICS****Date:** 10 – 16 May 2015**Venue:** Tashkent Institute of Irrigation and Melioration, Uzbekistan**Address:** Qori Niyoziy st. 39, Tashkent 100000 Uzbekistan,
Tel.: (998.71)237.19.40<http://www.ge-uz.eu/> and <http://www.geoinformatics.uz/>**School** Ilkhomjon Musaev – summer school coordinator**Administrations:** Utkir Shermanov – responsible teacher

Sherzod Rakhmonov – responsible teacher

Motto: How GE-UZ enabling sustainable development in UZ?**School organization:** Summer school will consist from two independent courses. Both courses will have joint sections: (i) each day Monday-Wednesday 30 min. for Bologna process related presentations, (ii) Keynote lectures (only on Tuesday) from national and international experts in geospatial field.

Key lectures will be delivered by professors and leading experts from GEUZ project partner universities, as well as external invited guests.

Topic specific lectures and practical works will be delivered by national and international teaching staff.

Courses: № 1. 3D Laser Scanner Application
№ 2. GIS in Environment**Summer school special event: keynote lectures****Date:** Tuesday May 12, 2015

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|---------------|--|
| 09:30 – 11:00 | Milan Horemuz: Data Acquisition Techniques Christoph Traun: GIS based Environmental Analysis Gernot Paulus: Unmanned Aerial Vehicles |
| 11:00 – 11:30 | Break |
| 11:30 – 13:00 | Manfred Mittlböck: Spatial Data Infrastructure and its Applications Khasan Magdiev: SDI in Uzbekistan Christoph Schroeder: The European Topic Centres as data and knowledge providers for environmental policy development and monitoring Akmal Paiziev: GIS for Business Apps: MyTaxi Case |



COURSE №1: 3D LASER SCANNER APPLICATION

Mission: To save Uzbekistan's cultural heritage buildings.

Teachers

National teacher: Utkir Shermanov – TIIM, Uzbekistan

International teacher: Milan Horemuz – KTH, Sweden

Aims and outcomes

Aims: The main aim of the Summer School is to develop theoretical knowledge and practical skills in use of terrestrial Laser Scanning techniques for 3D building modelling.

Learning outcomes: After successful completion, course participants will gain knowledge about concepts, working principles and different applications of Laser Scanner and be able to apply laser scanner to various engineering problems and perform data processing techniques.

Prerequisites: Successfully completion of Geodesy course and good computer skills are obligatory to participate in this course.

Premises

Field work, data collection: TIIM campus for Laser Scanner testing, Pilot work and data acquisition - Madrasah of Barak-Khan is one of few architectural monuments on the territory of Hast Imam Square (Hazrati Imam) located in Tashkent city.

Processing and analysis: Computer class / laboratory TIIM.

Software: Trimble Real Works software.

Transport: Bus transfer.

Course

Program: attachment № 1

Participants: Maximum number of participants – 20

COURSE №2: GIS in Environment

Mission: Let's do better decisions for a friendly environment.

Teachers

National teacher: Sherzod Rakhmonov – TIIM, Uzbekistan

International teacher: Christoph Traun – UNIGIS, ZGIS, Salzburg Austria

Aims and outcomes

Objectives: The main AIM of the Summer School is to provide participants with practical and methodological skills which make them capable to use main spatial analysis techniques of GIS in solving Environmental Management issues.

Learning outcomes: After successful completion, course participants can apply concepts from GIS and remote sensing RS to facilitate monitoring and decision making in environmental challenges.

Prerequisites: in order to attend courses participants must be familiar with the main concepts of GIS and according data structures. Basic skills in handling the ArcGIS Software (data management, basic mapping, etc.) are required but can be obtained in advance by the online ESRI Virtual Campus Course “Learning ArcGIS Desktop (for ArcGIS 10)”:

<http://training.esri.com/gateway/index.cfm?fa=catalog.webCourseDetail&courseid=1942>

In order to get free access to this course contact Christoph.traun@sbg.ac.at.

Premises

Lecture/Lab: Computer class / laboratory TIIM, LTDC.

Software: ArcGIS 10.2

Data: Satellite images and maps obtained through online Geoportals. DEM and ASRTM for Central Asia, Topographic Maps.

Transport: Bus transfer.


Course

Program: attachment №2

Participants: Maximum number of participants – 20

Program for 3D Laser Scanner application course

| Time | Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|-------|------------------------------|---|--|--|--|--|---|
| | May, 10 | May, 11 | May, 12 | May, 13 | May, 14 | May, 15 | May, 16 |
| 9:00 | Installations and setting up | EM+/HERE: Bologna - an overview of the main elements - Zebohon Isaqova | 09:00 – 13:00 Keynote lectures (see separate program) | EM+/HERE: Cooperation of business and educational institutions – Usman Sharifkhodjaev | Project work (inside): 3D Modeling from Point Clouds. | GISCA'15: Participation in conference | GISCA'15: Presentation during parallel sessions |
| 9:30 | | Lecture: Laser scanning - principle and applications | | Field work: Laser scanning of historical building (object: tbc, location: in Tashkent) | | | |
| 13:00 | | Lunch | Lunch | Lunch | Lunch | Lunch | Lunch |
| 14:00 | | Practice inside: Laser scanner instrument settings and parts. Project planning. | Field work: Laser scanning of historical building. | Project work (inside): Data download, registration, georeferencing. | Project work (inside): 3D Modeling from Point Clouds, preparation of presentation. | Project work: preparation of presentation. | GISCA'15 |
| 18:00 | | | | | | | |

 Morning lectures (May 11-13) and Keynote lectures (May 12) will be joint for both groups

Program for GIS in Environment

| Time | Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | | | |
|-------|------------------------------|--|---|---|--|--|--|--|---|-------|
| | May, 10 | May, 11 | May, 12 | May, 13 | May, 14 | May, 15 | May, 16 | | | |
| 9:00 | Installations and setting up | EM+/HERE: Bologna - an overview of the main elements - Zebohon Isaqova | 09:00 – 13:00 Keynote lectures (see separate program) | EM+/HERE: Cooperation of business and educational institutions – Usman Sharifkhodjaev | <p>Case Study 1: e.g.: Land Use / Land Cover Change based on freely available satellite imagery. (partly guided project work)</p> | GISCA'15: Participation in conference | GISCA'15: Presentation during parallel sessions | | | |
| 9:30 | | Lecture: Introduction to GIS in Environment, Rationale for GI-Application, Examples, Conceptual building blocks | | Lecture/Lab: GIS to support transparent and environmentally friendly spatial decisions. | | | | | | |
| 10:30 | | Lecture/Lab: Modeling the physical environment. Querying data to solve spatial questions. | Lecture/Lab: Investigating, describing and comparing shapes and patterns. | | | | | | | |
| 13:00 | | Lunch | Lunch | Lunch | | | | Lunch | Lunch | Lunch |
| 14:00 | | Lecture/Lab: Getting Data 1: Remote Sensing as a source of environmental data (image classification) Getting Data 2: Estimating continuous surfaces from point measurements (interpolation) | Lecture/Lab: Building blocks of spatial analysis: Map Algebra, Distance Analysis, Overlay Analysis | Lecture/Lab: Modelling of processes related to the topographical surface (water flow, irradiation, visibility, ...) | | | | Case Study 2: e.g.: Finding a site for renewable energy plants while minimizing environmental impact. (partly guided project work) | Case studies 1 & 2: Finalization of case studies and preparation of student presentations | |
| 18:00 | | | | | | | | | | |

Morning lectures (May 11-13) and Keynote lectures (May 12) will be joint for both groups