

## AGENDA - GeoTAK Technical Training 6 ENVIRONMENT

Osh and Bishkek, Kyrgyzstan

**GISCA Dissemination, Practical training and Curriculum development workshop in Kyrgyzstan, May 30-June 9, 2023**

Day	Time	Partner	Lecturer	Title	Description	Comments	
29/5/23		Arrival to Bishkek					
<b>GISCA 2023</b>							
30/5/23	09h00-17h00	GISCA 2023					
31/5/23	09h00-13h00	GISCA 2023 with GeoTAK session/workshop					
	18h45	Flight to Osh					
<b>Environment monitoring and risk control training at OshTU (in parallel, there are lectures at KSUCTA/KSTU*)</b>							
1/6/23	9h00-9h30	<b>Opening Welcome</b> Rector and representative of OshTU, Kyrgyzstan <b>Prof. Luis A. Ruiz</b> – Project coordinator					
		Short introduction into the course on point cloud classification					
	9h30-12h30	UPV	Prof. Luis A. Ruiz / Jesús Torralba	Point cloud classification	Short theoretical introduction; Practical training on point cloud classification	OshTU computer lab (Free software and CloudCompare)	
	9h30-12h30	*KTH	Huaan Fan	Math for geomatics	Matrix calculus, inverse matrices, linear equation systems, Taylor series; <u>Exercise</u> <u>1</u> : Matrix calculus and Taylor series	<b>*Geodesy Lectures at KSUCTA/KSTU</b>	
	12h30-14h00	Lunch					University Cafe
	14h00-17h00	UPV	Prof. Luis A. Ruiz / Jesús Torralba	Point cloud classification	Practical training on point cloud classification	OshTU computer lab (Free software and CloudCompare)	
14h00-17h00	*KTH	Huaan Fan	Basic concepts in theory of errors	Quality of measurements: precision, accuracy & reliability; Standard errors, weights & variance-covariance matrices <b>(VCM)</b>	<b>*Geodesy Lectures at KSUCTA/KSTU</b>		

Day	Time	Partner	Lecturer	Title	Description	Comments	
	19h00	Dinner					
2/6/23	9h00-17h00	<b>Field trip: Demonstration of UAV for environmental applications</b>					
	9h30-12h30	*KTH	Huaan Fan	Error propagation	Error propagation in linear/non-linear functions, with one or multiple variances <u>Exercise 2</u> : Error propagation	<b>*Geodesy Lectures at KSUCTA/KSTU</b>	
	12h30-14h00	Lunch					
	14h00-17h00	*KTH	Huaan Fan	Least squares adjustment	Least squares principle, linear observation equations, least squares estimates of parameters and VCMs	<b>*Geodesy Lectures at KSUCTA/KSTU</b>	
3/6/23	9h00-12h30	UL	Jernej Tekavec, Anka Lisec	Geospatial data modelling and analyses within GIS	Short theoretical introduction; Practical training on geospatial data analyses	OshTU computer lab QGIS or ArcGIS	
	9h30-12h30	*KTH	Huaan Fan	Least squares adjustment	<u>Exercise 3</u> : Least squares adjustment in linear models	<b>*Geodesy Lectures at KSUCTA/KSTU</b>	
	12h30-14h00	Lunch					
	14h00- 15h00	<b>Meeting with the OshTU teachers: Presentation of programs/courses, discussion</b>					
	15h00-17h30	VUB	Jonathan Chan	Hyperspectral remote sensing in geology	Theoretical introduction and practical exercise	Online	
	14h00-17h00	*KTH	Huaan Fan	Non-linear observation equations	Linearization of non-linear observation equations, observation equations of geodetic measurements: distances, angles, GNSS pseudo-ranges, GNSS phases; <u>Exercise 4</u> : Linearization of non-linear observation equations	<b>*Geodesy Lectures at KSUCTA/KSTU</b>	
4/6/23	7h00-18h00	<b>Field trip/work: Natural risks in mountainous areas</b>					

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<b>Environment monitoring and risk control training at KSTU</b>							
5/6/23	9h00-9h30	<b>Opening Welcome</b> Representatives of KSTU, Kyrgyzstan <b>Prof. Luis A. Ruiz</b> – Project coordinator					
	9h30-12h30	UPV	Prof. Luis A. Ruiz / Jesús Torralba	RS Change detection for environment	Short theoretical introduction; Practical training	Computer Lab 2/401 (Fusion, Weka, QGIS)	
	9h30-12h30	KTH	Huaan Fan	Geodetic gravimetry	Gravitation and gravity. Absolute and relative gravity measurements. Normal gravity formula. Satellite gravimetry. Applications.		
	10h00-12h30	One-on-one meetings with PhD students					
	12h30-14h00	Lunch					University Caffe
	14h00-15h00	One-on-one meetings with PhD students					
	15h00-17h00	UL	Anka Liseč, Jernej Tekavec	Interoperability in GIS, geospatial databases	Short theoretical introduction with practical demonstration	Computer Lab 2/401 FME	
	15h00-17h00	KTH	Huaan Fan	Geodetic reference systems (GRS)	Importance of GRS. Astrogeodetic triangulation. Height systems. Modern 3D reference frames. Swedish geodetic infrastructure. SK-63 and ITRF 2005 in Kyrgyzstan.		
19h00	Dinner						
6/6/23	9h30-12h30	<b>Meeting with the KSTU teachers: Presentation of programs/courses, discussion</b>					
	12h30-14h00	Lunch					
	14h00-17h00	<b>Field trip/work to Chuy valley, Issyk-Kul Lake Biosphere Territory</b>					Bishkek-Cholponata
<b>Curricula development workshop in Cholponata</b>							
7/6/23	Partners from Armenia and Kyrgyzstan	Curricula development: - Presentation on PhD programme progress, - Presentation of courses description and teaching materials					

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8/6/23	Partners from Armenia and Kyrgyzstan	Curricula development:				
		<ul style="list-style-type: none"> <li>- Presentation on PhD programme progress,</li> <li>- Presentation of courses description and teaching material</li> </ul>				
	All partners	Assessment of work done within GeoTAK project				
		Project management meeting				
9/6/23	9h00-12h30	<b>Field trip Chuy valley, Issyk-Kul Lake Biosphere Territory</b>				
	16h00-21h00	Travel to Bishkek				Cholponata-Bishkek
10/6/23		<b>Departure</b>				