



Programme

EEOBSS Summer School

8–12 September, 2017 | 7th Secondary Comprehensive School *Kuzman Shapkarev*, Blagoevgrad, Bulgaria

Day	Topic	Description
8 September	Welcome (All) (09:00 – 09:30 h A.M.)	Greetings from the organizers. Introductions to the EEOBSS summer school.
	Introduction to Remote Sensing Prof. DSc Garo Mardirossian (09:30 – 12:30 h A.M.)	What is Remote Sensing? Physical Basics of Remote Sensing discusses the electromagnetic spectrum, radiation and absorption principles, atmospheric influences and spectral reflectance properties.
	Lunch break (12:30 – 13:30 h)	
	Satellites Prof. DSc Garo Mardirossian (13:30 – 17:30 h P.M.)	'Satellites' covers different satellite orbits and sensors, followed by an overview of exemplary Earth Observation satellites (Sentinel, LANDSAT, SPOT, Ikonos, Radarsat, Meteosat, Quickbird, ERS, Envisat, IRS, NOAA, GOES etc.).
9 September	GPS and GNSS (theory) Prof. DSc Dimitar Dimitrov (08:30 – 12:30 h A.M.)	What are GPS and GNSS – basic principles and their practical applications?
	Lunch break (12:30 – 13:30 h)	
	GPS and GNSS (practical) Prof. DSc Dimitar Dimitrov (13:30 – 17:30 h P.M.)	Using GPS and GNSS on field to define location and collect ground control points for image georeferencing and accuracy assessment.
10 September	Resolution. Image registration. Visual Image Interpretation. Image Processing (theory) Assoc. Prof. Lachezar Filchev, Ph.D. (08:30 – 12:30 h A.M.)	'Resolution' describes image content in geometric, spectral, radiometric and temporal ways. 'Image registration' uses the field data collected during the previous day hands-on to geo-register an aerial photo or a satellite image. The basics of 'Visual Image Interpretation' and 'Image Processing' are used before interpreting or classifying an image for geometric and radiometric correction and image enhancement.
	Lunch break (12:30 – 13:30 h)	
	Resolution. Visual Image Interpretation. Image Processing (practical) Assoc. Prof. Lachezar Filchev, Ph.D. (13:30 – 17:30 h P.M.)	Exploring Sentinel satellite images and image metadata with LEOworks. Interpreting basic environmental and man-made features using visual image interpretation on RGB and CIR composites. Creating and saving vector files in native formats. Pre-processing and image enhancement techniques on optical and radar satellite images.



Day	Topic	Description
11 September	Image Classification (theory) Assoc. Prof. Lachezar Filchev, Ph.D. (08:30 – 12:30 h A.M.)	The final step of interpreting a satellite image is the classification procedure. Unsupervised and supervised image classification methods are described in after clarifying why a classification is useful.
	Lunch break (12:30 – 13:30 h)	
Day 4	Image Classification (practical) Assoc. Prof. Lachezar Filchev, Ph.D. (13:30 – 17:30 h P.M.)	<ul style="list-style-type: none"> Using the unsupervised (ISODATA) and supervised image classification algorithms Maximum Likelihood Classification (MLC) on an optical satellite image. Accuracy assessment. Drone demonstration (Assoc. Prof. Georgi Jelev).
12 September	Application of Earth Observation in Ecosystem Services Dr. Ioannis Manakos (09:00 – 11:00 h A.M.)	Applications of Earth Observation in ecosystem services and live demonstration for field data collection via a crowdsourcing app to perform FAO LCCS2 (Land Cover Classification System) classification and validation.
	Climate and Climate Change Prof. Dr. Rainer Reuter (11:00 – 13:00 h A.M.)	The role of weather and climate, the global rise of temperature and its causes and consequences based on different projections for the future, and changes which are expected on regional scale with a focus on Europe and also expected climate changes in Bulgaria + hands-on demonstration of thermal emission and greenhouse effect.
	Lunch break (13:00 – 13:30 h)	
Day 5	Closing ceremony (All participants + trainers) (13:30 – 15:00 h P.M.)	Awarding of certificates and farewell