

Course/module description

| | |
|---|---|
| Course provider (institution) | Osh Technological University named after M. Adyshev (OshTU) |
| Course title | Remote Sensing |
| Target group | PhD Students (Cartography and Geoinformation) |
| Type (compulsory/optional): | Mandatory |
| Number of ECTS credits allocated (if applicable); estimated workload | 5 ECTS (150 academic hours) |
| Mode of delivery (face-to-face/ distance learning etc.); number of contact hours | 45 hours (face-to-face hours) |
| Language of instruction | Kyrgyz/Russian/ English |
| Prerequisites and co-requisites (if applicable) | Geographic Information Systems (GIS). |
| Course aims: | <p>This course aims at providing practical knowledge and in-depth understanding of Remote Sensing, through practical applications and real-world examples, students will be provided with necessary skills to generate and analyze high-level remote sensing products.</p> <p>Specific objectives are:</p> <ul style="list-style-type: none"> - to train students on remote sensing data type and formats, imagery products and their availability; - to give insights on processing methods and techniques for handling radiometric and geometric properties of remotely sensed data - to give principles and methods of multi-resolutions and multi-spectral data fusion, multitemporal processing and accuracy assessment; - to develop data processing automation through batch processing. |
| Learning outcomes: | <p>On completion of this course, students will be able to:</p> <ul style="list-style-type: none"> - Explain and communicate quantitative remote-sensing principles and integrate different tools for remote sensing data analysis. - Perform image corrections and enhancements and generate high-level remote sensing products. - Manipulate and process RS data using manual and automated techniques - Critically compare different type of remote sensing data products and analysis techniques and select the more appropriate to solve a real-world problem. |
| Competences | - |

| | |
|--|--|
| Course content: | <p>The syllabus will cover topics from:</p> <ul style="list-style-type: none"> • Remote Sensing data types and formats • Multi-source and multi-resolution data products (Landsat, ASTER, MODIS, EO-1, DTMs, Sentinel-2). • Techniques of Radiometric and Geometric Correction • RS Image Fusion • Multitemporal Remote Sensing and Accuracy Assessment |
| Recommended or required reading and other learning resources/tools: | <ol style="list-style-type: none"> 1. <i>Lecture Materials</i> 2. <i>Software:</i> Agisoft Metasphere, QGIS, ESA Sentinel Toolboxes, Multitemporal RS 3. <i>Recommended Books:</i> <ul style="list-style-type: none"> • Remote Sensing Digital Image Analysis - An Introduction (Fifth Edition). Springer-Verlag Berlin Heidelberg, 2013. • Image processing and GIS for remote sensing: techniques and applications, Chichester, Chichester, Wiley-Blackwell, 2016. |
| Planned learning activities and teaching methods: | <ol style="list-style-type: none"> 1. Regular lectures; 2. Laboratory and practical work 3. Discussions in class |
| Assessment methods and criteria: | <ol style="list-style-type: none"> 1. Mid-term exam (25%) 2. Labs and computing tasks (25%) 3. Class discussion/participation (10%) 4. Final exam 40% |
| Additional information: | <p>Course instructor – Gulshaan Ergeshova Contacts: gulshaan.ergeshova@gmail.com Cell: +996 556 112 279</p> |