

Jan Evangelista Purkyně University in Ústí nad Labem
Faculty of Environment

Study material
GIS AND ENVIRONMENT

doc. Ing. Jan Pacina, Ph.D.



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Aims

Within the subject GIS and Environment the students will apply advanced methods of geoinformatics in the field on the environment. This includes spatial data collection using the newest methods of geoinformatics (remote sensing, airborne laser scanning, small format aerial photography, cloud based field data collection) followed by the data processing, analysis and interpretation. The students will follow the comprehensive workflow from the stage of the data collection preparation phase to the final data publication in self-designed information system.

Study topics

1. The spatial data collection methods overview.
2. Laser scanning data processing workflow.
3. Image based 3D modelling workflow.
4. Workflow for other data collection methods (ie. InSAR, Remote Sensing, Batymetric mapping).
5. Distributed systems for spatial data storage, analysis and visualization.

Study literature

ABER, James S., Irene MARZOLFF a Johannes B. RIES. Small-format aerial photography: principles, techniques and geoscience applications. Amsterdam: Elsevier, 2010. ISBN 978-0-444-53260-2.LI, Zhilin, Qing ZHU a Chris GOLD.

Digital terrain modeling: principles and methodology. Boca Raton: CRC Press, c2005. ISBN 0-415-32462-9.

Environmental remote sensing from regional to global scales. Editor Giles M. FOODY, editor Dennis P. CURRAN. Chichester [u.a.]: John Wiley, 1994. ISBN 0-471-94434-3.

JENSEN, John R. Remote sensing of the environment: an earth resource perspective. 2nd ed. Harlow: Pearson, c2014. Pearson New international edition. ISBN 978-1-29202-170-6.

HERITAGE, G. L. a Andrew R. G. LARGE. Laser scanning for the environmental sciences. Chichester, UK: Wiley-Blackwell, 2009. ISBN 9781444311945.