

Module No.	Module name
P8	Ecoinformatics and Environmental Monitoring
Module coordinator	
Prof. Dr. Barbara Koch Email: Barbara.Koch@felis.uni-freiburg.de	
Additional teaching staff	
Prof. Dr. G. Becker, Prof. Dr. E. Hildebrand, Prof. Dr. L. Jaeger, Prof. Dr. H. Mayer, Prof. Dr. D. Pelz, Prof. Dr. A. Reif, Prof. Dr. H. Spiecker	
Syllabus	
<p>General:</p> <p>Introduction into different ecological monitoring systems comprising remote sensing and inventories, vegetation monitoring, meteorological monitoring, forest growth monitoring and assessment as well as soil monitoring. Introduction into management of spatial data for forestry and environmental management applications.</p> <p>Specific Modules:</p> <p>Remote sensing theory and applications for assessment of landcover features in different scales and with different instruments. Basics in evaluation of image data.</p> <p>Meteorological and hydrometeorological monitoring will be studied using the forest experimental site Hartheim as an example for long term monitoring.</p> <p>Monitoring forest conditions. Growth assessment in long term permanent plots. Stem analysis. Continuous growth monitoring based on diameter tapes and dendrometer measurements.</p> <p>Vegetation mapping, monitoring of biodiversity.</p> <p>Documentation and monitoring of harvesting activities. Monitoring of resource development (timber dimension, wood quality, etc)</p> <p>Environmental monitoring: Introduction to german and european forest-related monitoring networks. Aspects of implementation of monitoring networks. Management and processing of monitoring data.</p>	
Learning goals and qualifications	
<p>Overview on monitoring systems and instruments. Ability to plan and process basic monitoring concepts and measurements. Overview on spatial data types and database management systems. Information on GIS Systems for logistic planning. Ability to chose tools to sample, manage and explore environmental monitoring. Ability to discuss regionalization problems of point data</p>	
Specific learning goals	
<p>The students should learn how to design forest meteorological/hydrometeorological monitoring with respect to specific objectives.</p> <p>Knowledge of major principles and concepts of vegetation monitoring. After attending this course the students will be able to develop and evaluate vegetation monitoring studies. Basic knowledge of environmental monitoring with respect to existing monitoring networks and their conceptual aspects.</p>	

Teaching and learning methods
Lecture, practical work
Prerequisites
none
Requirements for registration
None
Distribution of work load
<i>Contact hours</i> 90h (Lectures, pracs, excursion, exam)
<i>Independent learning</i> 35h (Preparation, reading etc.)
Proposed assessment
Written exam
Link to learning resources
http://www.felis.uni-freiburg.de , : http://www.ffu.uni-freiburg.de/Waldwachstum/lehre.htm
Preliminary Reading
Remote Sensing and Image Interpretation. Thomas Lillesand and Ralph Kiefer, 4 th edition
Comments