

Course Description

Advanced Environmental Applications of Remote Sensing

Instructor: Dr. Jan van Aardt

This course is intended as follow-up to “*Environmental Applications of Remote Sensing*” for non-Imaging Science students and as a first introduction to applications of remote sensing for Imaging Science students. Students were exposed to principles that underpin the interaction of electromagnetic energy with natural surfaces, remote sensing systems, data-pre-processing, and a selection of environmental applications in “*Environmental Applications of Remote Sensing*”. The “*Advanced Environmental Applications of Remote Sensing*” course will focus on a broader selection of analytical techniques with an application-centric presentation. These techniques include narrow-band indices, filtering in the spatial and frequency domains, principal component analysis, textural analysis, hybrid and object-oriented classifiers, change detection methods, and structural (lidar) analysis. Applications include vegetation stress assessment, advanced image classification for land use purposes, detecting change between image scenes, and assessing topography and structure in forestry and grassland ecosystems (volume, biomass, biodiversity) and built environments. (1017-213 or 1051-420 or permission of instructor) Class 4, Credit 4 (W)