

## Remote Sensing and Image Analysis (AGSC 3600/PSMA 6525) – 3 credit hours

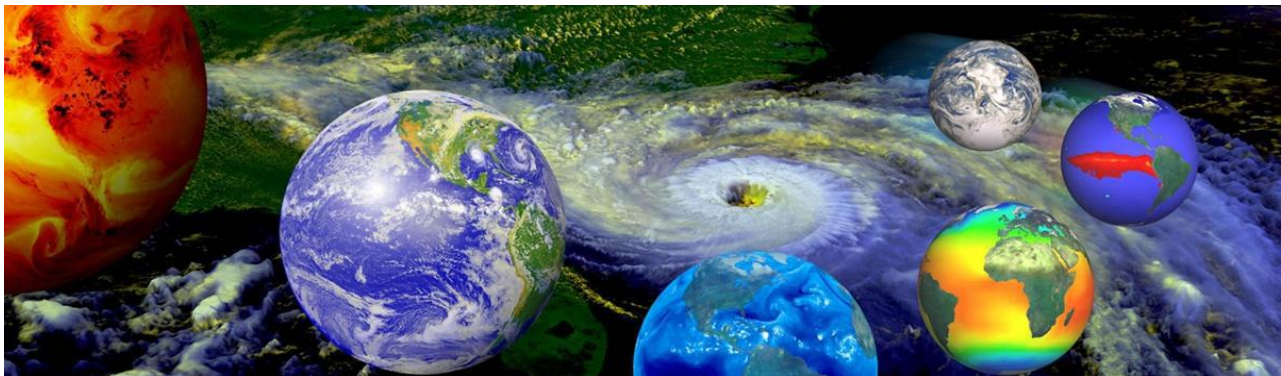
Theory and practice of remote sensing is a rapidly evolving field of science with great opportunities of contribution to studies of inventory, and monitoring agricultural, forest and rangeland resources, land use land cover mapping, water resources, geology, wetlands and coastal areas and son on. The main focus of this course is enhancing the understanding of remote sensing data acquisition, analysis, interpretation and bio-physical modeling in order to produce scaled maps that are ready for applications within a geospatial information system (GIS). Accordingly, this course introduces students to the principles and applications of remote sensing including photogrammetry, multispectral, hyperspectral and thermal imaging, and RADAR and LiDAR image analysis in lecture series. In the lab sessions, the students will be introduced to practices of visual image interpretation, radiometric and geometric corrections, spectral image enhancement, classification and accuracy assessment, and analysis of temporal change detection.

### **Students in this Course are Competent in:**

- Fundamental principles and applications of remote sensing to real-world problems.
- Acquiring remote sensing data, display, image pre-processing and enhancement techniques.
- Multi-temporal image analysis, change detection and the understanding of changing environment.
- Processing remotely sensed data for GIS utility.
- Software for remote sensing and image analysis (such as but not limited to MIPS, ArcGIS, ERDAS Imagine, IDRISI).

### **Topic Covered are:**

- Remote Sensing basic principles; platforms & sensors; and hardware & software
- Preprocessing remotely sensed data: image rectification, radiometric correction and sub setting
- Image enhancement and transformation
- Image classification, post classification smoothing and accuracy assessment,
- Environmental change detection and GIS integration



### **For more Information Contact:**

#### **Dr. Tekleab S Gala**

Ass. Professor of Remote Sensing & Spatial Analysis  
Department of Agricultural & Environmental Sciences  
College of Agriculture, Human and Natural Sciences  
3500 John A. Merritt Blvd. Nashville. TN 37209

Office 113 & 204c Farrell-Westbrook building  
Phone: (615) 963-7977; Fax: (615) 963 - 5744  
Email: [tgala@tnstate.edu](mailto:tgala@tnstate.edu)