Engs 624: Introduction to Digital Image Processing

School of Engineering

This course introduces students to the fundamental principles of digital image processing applied to remotely sensed data. The course begins with a review of the remote sensing process. Methods of obtaining digital remotely sensed data are then reviewed including digital systems (e.g., scanners, pushbroom sensors) and the process of hardcopy digitzation. Fundamental statistical analysis techniques are then reviewed. Typical digital image processing system characteristics are described with reference to the major software providers. Methods of radiometric correction are introduced including those based on radiative transfer modeling and image-to-image normalization. Image-to- image and image-to-map geometric correction algorithms are described. Image enhancement algorithms that can be used to enhance subtle characteristics for improved visual examination are discussed. Digital methods of extracting information from remotely sensed data are summarized including the key elements of supervised and unsupervised classification and accuracy assessment. The final module describes the logic and algorithms used to perform digital change detection.
3 Credits

Prerequisites

- Student must be admitted to Certificate in Geographic Info Systems program.

Instruction Type(s)

- Indep Study: Independent Study for Engs 624
- Indep Study: Online Program for Engs 624

Subject Areas

- Engineering, Other