



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Introduction to Photogrammetry

ECE 6400

Credit Hours:

3.00

Course Levels:

Graduate

Course Components:

Lecture

Lab

Course Description:

Analytical and digital photogrammetry, bundle block adjustment, analytical camera calibration, aerotriangulation, image acquisition systems, GPS controlled aerotriangulation, quality control and network design, DEMs and orthophotography.

Prerequisites and Co-requisites:

Graduate level enrollment in the College of Engineering; or permission of instructor. Knowledge of linear algebra expected.

Course Goals / Objectives:

- Introduce students to image acquisition techniques and modeling of sensors
 - Perform sensor calibration, pose estimation, 3D scene modeling from extracted image features
 - Using redundancy through bundle block adjustment
 - Introduce image processing method
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Course Topics:

- Introduction to analytical and digital photogrammetry
 - Sensor models (frame and line cameras)
 - Sensor calibration
 - Image resection
 - Object space intersection
 - Electromagnetic imaging systems
 - Scanners
 - Digital signals and systems for photogrammetry
 - Feature extraction and grouping
 - Radiometry and photometry
 - Introduction to multiple view geometry
 - Digital elevation maps
 - Multiple view bundle block adjustment
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Designation:

Elective