Improving Multidisciplinary Instruction Through Applications of Drone Technology

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Program Descriptions

Geomatics

• Surveying
• Remote Sensing
• Digital Mapping
• GIS
• GPS
• Satellite Imaging & Other Technologies of Geospatial Science

Communication and Leadership Development

• Journalism
• Print Design
• Science Communication
• Event Planning
• Web Design
• Videography
• Agricultural Issues
Connection Point - Location
Curriculum Crossover
How to integrate skills and techniques from two different majors

We had to think about

- What skills do GEM and CLD students possess that can benefit students from the other major?
- How to incorporate drone usage in both CLD and GEM applications.
- Does this crossover occur in the work world?
Connection Point
Drone Usage
Geomatics

**Drone/traditional field work:**
- Easier to access remote/inaccessible areas
- Quicker data collection
- Lower cost as far as man hours for collection
- Possibly smaller crew
- Some programs allow on the fly checking of data

**Drone/aerial or satellite:**
- Lower cost of platform
- Can achieve higher temporal resolution (can fly whenever with a drone, repeatedly—it can be harder logistically to arrange satellite pointing or aircraft mission)
- Can fly lower/less cloud cover issues
- High spatial resolution
- Lower cost for data

Remote sensing can identify phenomenon that are not visible to the naked eye.
- LiDAR
- Infrared
- Thermal

Remote sensing can identify phenomenon that are not visible to the naked eye.
**Drone Pros:**
- Easier to access remote/inaccessible areas
- Quicker video collection
- Lower cost as far as man hours for collection
- Possibly smaller crew
- Smooth footage
- Allows for multiple angles not previously possible
- High-quality video quality (full HD) available at a low price-point
- Lends cinematic quality to videos

**Video Application:**
- Realtors
- Property Development and Management
- Event Coverage
- Tourism
- Science Communication
GEM student, Chelin Lauer designed this maze for a local agri-tourism business, Fox Squirrel Corn Maze.

Students created promotional materials for the farm using drones and traditional photography.

The orthomosaic was created using the CLD drone and used for marketing and as a site map.
Geomatics and CLD: Connecting the Dots with STEM

GEM Graduate Student, Ali Gonzalez, offers drone workshops for CLD students in advanced videography, AEC4036.

GEM Graduate Student, Ali Gonzalez, captures footage for CLD student, Kaitlin McClure to create a science communication video at M&B Dairy.

CLD students created video tutorials for CLD and GEM students. Tutorials included how to download video files from Phantom and access them from computers. Tutorials will be used for future classes.
Questions?