

BCIT School of Construction and the Environment

SURV 1125 – UAS Applications for Geomatics



Unmanned Aerial Systems, or UAS, are revolutionizing the way geospatial data is gathered for use in surveying and mapping. High resolution aerial surveys that once required weeks of preparation can now be carried out virtually on-demand using small, computer guided aircraft commonly referred to as UAVs (unmanned aerial vehicles) or “drones”.

BCIT's ***UAS Applications for Geomatics*** is a six week part-time studies course developed to teach the safe and practical use of drones for aerial surveying. Participants will design a mapping project and employ UAVs to acquire aerial images along pre-calculated flight lines. Deliverables feature high resolution digital terrain models, orthophoto mosaics, and NDVI analyses.

Course topics include:

- Basic aircraft principles
- Understanding the capabilities and limitations of UAS
- Exploring the range of applications and future of UAS in Geomatics
- Gaining insight into Transport Canada's specific operational requirements
- Learning photogrammetric and remote sensing concepts and performing essential camera calibrations
- Carrying out safe image acquisition with a pre-planned, semi-autonomous flight using UAV
- Processing images to produce a digital terrain model and orthophoto mosaic