Aerial Mapping and Survey Course Outlines for

University of Dar es Salaam, School of Mine and Geoscience(SoMG)

Course duration: 1 Week

Dates:

Course Objectives:

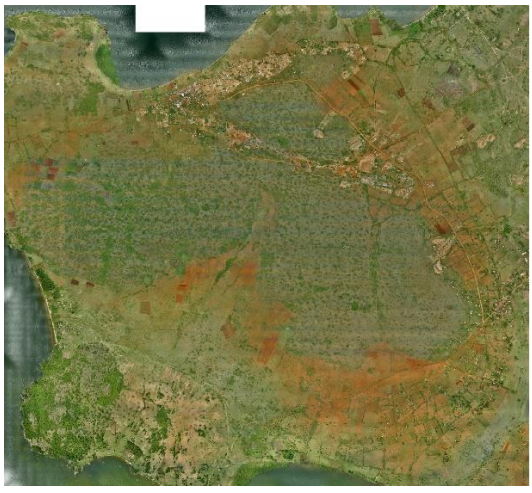
- Understand how to use a UAV to acquire data over an area of interest
- Know how to process raw UAV data in Agisoft in-order to produce geoinformation products
- Know how to analyses and interpret the generated geoinformation products for various applications

Tools:

General: Google Earth Pro, Zoom, Any desk, ImBatch

Data acquisition: Mission Planner, Pix4d Capture, Q-Ground control, Drone Deploy, Litchi, DJI Pilot

Data Processing and Analysis: Pix4d Mapper, Agisoft, Drone Deploy, Drone to Map (Arc GIS extension), Global Mapper, Arc GIS



Course Contents:

1. Introduction to Aerial Mapping and Survey
2. Aerial Data acquisition
    - Drone selection Process
    - Mission Planning (Google earth, Mission Planner, Pix4d Capture, QGround control, Drone to Map, Litchi etc)
    - Flight preparations: Safety measures, area inspection, plan from the office, calculate risk factors, fly safe and productively. Choosing altitude, image overlap, selecting relative and absolute accuracy.
    - Ground control survey
    - Flight Operations (Flight Procedures, VLOS, BVLOS, Weather, Camera set up)
    - Data check techniques
    - **Practical**
3. Aerial data processing
    - Photogrammetry techniques (Agisoft, Pix4d Mapper, Global Mapper, ARC GIS etc)
    - LIDAR techniques (Global Mapper, DJI Terra)
    - Generation of high-resolution aerial imagery, Point clouds, 3D Models, Contours DSM and DTM
    - **Practical**

4. Aerial Data analysis and applications
    - Volumetric analysis
    - Drainage analysis
    - Details counting
    - Details comparison
    - Details inspection
    - Topographical analysis
    - Area and linear analysis