CONTINUOS CONTRACTOR DEVELOPMENT (CCD)

20 POINTS CCD | ONLINE COURSE
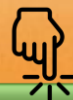## VIA ZOOM MEETING

COURSE TITLE:

DRONE APPLICATION FOR CONSTRUCTION AND ENGINEERING

RM250/PAX

DATE: **14 – 15 JUNE 2023**

TIME: **9.00 AM – 5.00 PM**

CLICK BELOW FOR MORE INFO:

Register Now

TRAINER'S PROFILE

COURSE OUTLINE

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DRONE APPLICATION FOR CONSTRUCTION AND ENGINEERING

COURSE SUMMARY

In the wake of Industry 4.0, many companies have tried to utilise automation and data exchange in manufacturing technologies. This is especially prevalent in the construction industry where the need for increased efficiency and delivering a quality product both physically and digitally has now become a necessity rather than an indulgence. Many technologies have sprung up to meet the challenge, such as artificial intelligence and drones.

Call it a drone, Unmanned Aerial Vehicle (UAV), Unmanned Aerial System (UAS) or Remote Piloted Aircraft System (RPAS), it usually involves a flying platform that is remotely controlled by a pilot assisted by a flight software, onboard sensors and GPS/ GLONASS. It has a payload which is usually a camera system but could also be technologies such as LIDAR (Light Detection and Ranging) and thermal cameras. There is shared telemetry between the drone and the ground control station which enables the pilot to fly in a stable manner.

This course is to exposure the participants about basic knowledge of drone technology which can apply in construction industry. The duration of 2 days training enough for participants to learn and practice at work.

COURSE OUTCOME

Day 1: Introduction to Drone Application in Construction

- Participant should be able to understand flight mechanism of drone
- Participants should be able to identify and know the functions of mechanical and electronic parts of drone
- Participants should be able to understand the potential of drone technology in construction business workflow
- Participant should be able to understand CAAM and Jupem related regulations
- Participants should be able to understand the risk involved and safety operation of drone in Construction site

Day 2: Drone Aerial Data Acquisition for Construction

- Participant should be able to understand photogrammetric data acquisition
- Participant should be able to understand optimum pre-flight planning for data acquisition of different terrain and surface
- Participant should be able to understand how to acquire aerial data through autonomous flight operation and manual data capture area of interest
- Participant should be able to understand autonomous flight operation with the usage of GCPs, GNSS Base Station and RTK

COURSE OUTLINE

Day 1: Introduction to Drone Application in Construction

- Introduction to Drone Technology
- History and Drone Technology Development
- Drone Technical Roles in Construction
- Drone Data Analytics for Construction
- Value of Drones for Construction Businesses
- Drone Application in Construction Business Workflow
- CAAM and Jupem Regulations
- Drone Flight System & Mechanism (focus on VTOL)
- Drone Handling, Maintenance & Calibration
- Drone Operation Risk Assessment
- Preflight Checklist
- Understanding flight control

Day 2: Drone Aerial Data Acquisition for Construction

- Introduction of Photogrammetry and LiDAR
- Theory of photogrammetry
- Drone Data Acquisition Technique for Construction site
- Drone applications & Mapping Hardwares
- Site recce & pre-flight planning
- Theory of Ground control Point using GPS RTK

DRONE APPLICATION FOR CONSTRUCTION AND ENGINEERING

TENTATIVE PROGRAMME

Day 1 – Introduction to Drone Application in Construction

8.30 am – 9.00 am   - Online registration

9.00 am – 10.15 am - Introduction to Drone Technology

  - History and Drone Technology Development

10.15 am – 10.30 am - Tea break

10.30 am – 12.30 pm - Drone Technical Roles in Construction

  - Drone Data Analytics for Construction

  - Value of Drones for Construction Businesses

  - Drone Application in Construction Business Workflow

  - Drone Flight System & Mechanism

  - Drone Maintenance & System Calibration

  - Pre-flight & safety checklist

12.30 pm – 2.00 pm - Lunch break

2.00 pm – 5.00 pm   - CAAM and Jupem Regulations

  - Drone Operation Risk Assessment

5.00 pm   - Class dismiss

Day 2 – Drone Aerial Data Acquisition for Construction

9.00 am – 10.15 am - Introduction to Drone Aerial Data Acquisition

10.15 am – 10.30 am - Tea break

10.30 am – 12.30 pm - Introduction to Photogrammetry and LiDAR

                            - Data Acquisition Technique for Construction site

12.30 pm – 2.00 pm - Lunch break

2.00 pm – 5.00 pm   - Drone applications & Mapping Hardwares

                            - Site recce & pre-flight planning

                            - Accuracy and Resolutions

                            - Theory of Ground control Point using GPS RTK

5.00 pm   - Class dismiss