

HONG KONG AIR CADET CORPS



MULTICOPTER UAV PILOT CERTIFICATE PROGRAM 3rd Class (2017 – 2018)

Supporting organizations:



香港大學機械工程系
DEPARTMENT OF MECHANICAL ENGINEERING
THE UNIVERSITY OF HONG KONG



THE HONG KONG INSTITUTE OF
SURVEYORS
香港測量師學會



THE HONG KONG
INSTITUTION OF ENGINEERS
香港工程師學會
Mechanical, Marine, Naval Architecture & Chemical Division
機械、船機、造船及化工分部



Training details

Origin: The Hong Kong Air Cadet Corps 香港航空青年團

Hong Kong Air Cadet Corps is a uniformed group under the policy aegis of the Home Affairs Bureau. A registered charitable body and a member organization of the Hong Kong Community Chest, we offer quality aviation education programs to prepare young people for possible future service in the local Aviation industry, thereby contributing to the economic well-being of Hong Kong. (<http://www.aircadets.org.hk/web/main.php>)

Training targets:

- 1) Configurations of multicopter and construction.
- 2) Safety of UAV management.
- 3) Basic to advanced multicopter flying skill.

Beneficiaries:

| Description | Age | Quota |
|---|-------------|-------|
| Hong Kong Air Cadet Corps Officer | 21 or above | 20 |
| Hong Kong Air Cadet Corps members Students of the University of Hong Kong. | 14 or above | |
| Members of The Hong Kong Institution of Engineers | 21 or above | |
| Members of The Hong Kong Aviation Club | 21 or above | |
| Members of The Hong Kong Institute Of Surveyors | 21 or above | |
| Remarks: | | |
| i) Applicants who has experience on RC model will be considered in advance. ii) Additional requirements can be imposed by the specific organizations during recruitment. | | |

Supporting organizations:

- 1) The Mechanical Engineering Department of HKU
- 2) HKIE- Mechanical, Marine, Naval Architecture and Chemical Division
- 3) The Hong Kong Aviation Club
- 4) The Hong Kong Institute Of Surveyors

Training schedule:

| Class code | Date | Application deadline |
|------------|------------------------------|----------------------|
| DRPT0703 | November, 2017 – March, 2018 | 18 Nov 2017 |

| General arrangement for junior trainees | | |
|---|--|---------------------------------------|
| Module | Time | Venue |
| Lectures | 2 Week days | The Hong Kong Aviation Club (Pending) |
| Flight simulation | 1 Week day 7:00pm~9:00pm | |
| Indoor flight practice | 4 Sunday (09:30-13:00 or 14:00-17:00) | |
| Multicopter construction | 1 Sunday (9:30am – 2:00pm) | |
| Outdoor flight practice | 6 days (Saturday & Sunday) (09:30-13:00 or 14:00-17:00) | |
| | | |

Remark :

- 1) Trainee should not be late more than 15mins unless getting approval in advance, otherwise the attendance will not be counted.
- 2) **Coach level trainees** need to come half an hour earlier in flight training session.

| | |
|-------------------------|---|
| <p>Nov, 2017</p> | <p>SUN MON TUE WED THU FRI SAT</p> <p>1^十 2^十 3^十 4^十</p> <p>5^十 6^十 7^十 8^十 9^十 10^十 11^十</p> <p>12^十 13^十 14^十 15^十 16^十 17^十 18^十 Application deadline</p> <p>19^十 20^十 21^十 22^十 23^十 24^十 25^十</p> <p>26^十 27^十 28^十 29^十 30^十</p> <p>27: Lecture 19:00-22:00 (Junior) 29: Lecture 19:00-21:00 (Junior) 21:00-22:00 (Coach)</p> |
| <p>Dec, 2017</p> | <p>SUN MON TUE WED THU FRI SAT</p> <p>1^十 2^十 Flight simulation 7:00pm-9:00pm</p> <p>3^十 4^十 5^十 6^十 7^十 8^十 9^十 } Indoor Flight Training (Coach level trainees need to come half an hour earlier)</p> <p>10^十 11^十 12^十 13^十 14^十 15^十 16^十 } (09:30-13:00 or 14:00-17:30)</p> <p>17^十 18^十 19^十 20^十 21^十 22^十 23^十 }</p> <p>24^十 25^十 26^十 27^十 28^十 29^十 30^十 }</p> <p>31 Indoor Flight Exam (9:30am – 1:00pm)</p> |
| <p>Jan, 2018</p> | <p>SUN MON TUE WED THU FRI SAT</p> <p>1^十 2^十 3^十 4^十 5^十 6^十</p> <p>7^十 8^十 9^十 10^十 11^十 12^十 13^十 } Indoor Flight Exam (9:30am – 1:00pm)</p> <p>14^十 15^十 16^十 17^十 18^十 19^十 20^十 } UAV construction (9:30am – 2:00pm)</p> <p>21^十 22^十 23^十 24^十 25^十 26^十 27^十 } Outdoor Flight Training (Coach level trainees need to come half an hour earlier)</p> <p>28^十 29^十 30^十 31^十 } (09:30-13:00 or 14:00-17:30)</p> |
| <p>Feb, 2018</p> | <p>SUN MON TUE WED THU FRI SAT</p> <p>1^十 2^十 3^十</p> <p>4^十 5^十 6^十 7^十 8^十 9^十 10^十</p> <p>11^十 12^十 13^十 14^十 15^十 16^十 17^十 } Outdoor Flight Training (Coach level trainees need to come half an hour earlier)</p> <p>18^十 19^十 20^十 21^十 22^十 23^十 24^十 } (09:30-13:00 or 14:00-17:30)</p> <p>25^十 26^十 27^十 28^十</p> |
| <p>Mar, 2018</p> | <p>SUN MON TUE WED THU FRI SAT</p> <p>1^十 2^十 3^十 } Outdoor Flight Exam (9:30am – 2:00pm)</p> <p>4^十 5^十 6^十 7^十 8^十 9^十 10^十 }</p> <p>11^十 12^十 13^十 14^十 15^十 16^十 17^十 }</p> <p>18^十 19^十 20^十 21^十 22^十 23^十 24^十 }</p> <p>25^十 26^十 27^十 28^十 29^十 30^十 31^十 }</p> |

Training fee

| Level | Content | Prerequisite | Basic Course Charge (HK\$) | HKACC associate member fee for non-HKACC member (HK\$) |
|----------------------------|--|-------------------------------------|----------------------------|--|
| Beginner to Junior Indoor | Indoor flight training, Beginner level to Junior Indoor. | None | 800 | 30 |
| Junior (Outdoor) to Senior | Outdoor flight training, Junior to senior level. | Passed the Junior Indoor level test | 600 | 30 (Free of charge for valid HKACC membership) |
| Coach | Deeper knowledge for instructor level. | Passed the Senior level test | 0 | 30 |

The above charges are collected by HKACC (A registered charitable body under the law of Hong Kong). They cover all training materials and insurance. This is a non-profit making activity and the charges are non-refundable.

All trainees must bring a **Laptop computer**, with window 7 or above, along with them for the quadcopter construction & flight simulation.

After joining the program, additional charge is required for 2nd or more attempts of written test or practical flight test.

| Number of attempts | Charge per attempt (HK\$) |
|--------------------|---------------------------|
| 1 | 0 |
| >1 | 200 |

Course material:

| Item | Description | Source |
|------|--|---|
| 1 | Handout | Provided |
| 2 | Quadcopter for indoor training (size =100) | Will be given to each trainee for indoor flight practice and home practice. |
| 2 | Multicopter for outdoor training (Size = 250) | Provided |
| 3 | Multicopter for outdoor training (Size ≥ 450) | Provided |
| 4 | Laptop computer for flight controller setup & flight simulation. | Not provided, trainee should bring their own computer. |

Instruction language:

Cantonese + English

Application procedures:

- a) Submit the application before the deadline.
- b) Due to quota limitation, the number of trainee will be limited to 15~20 in each class.
- c) Applicants will be informed whether their application are accepted or not within 5 working days after the deadline and they need to transfer the fee accordingly within 5 working days.
- d) A success non-HKACC member applicant is also required to join HKACC as an associate member to fulfil the requirement of insurance for this activities.

Certificate requirement:

A training logbook will be kept for each trainee. Before taking the practical flight test, a trainee need to fulfil the following requirements:

- a) Pass the written test
- b) Attended all lectures, the flight simulation section and the model construction section
- c) Attended at least 3 indoor flight practice sections and 4 outdoor flight practice section.

| Level of certificate | Requirement | Award |
|----------------------|---|-------------|
| Beginner | Submission: <ul style="list-style-type: none">• A training Logbook. Pass: <ul style="list-style-type: none">• Written test.• Practical flight test part A indoor. Capability: <ul style="list-style-type: none">• Able to manipulate a Multicopter indoor with drone heading forward.• Able to hover the Multicopter and fly paths levelly with compass (head free mode) available. | Certificate |
| Junior (Indoor) | Submission: <ul style="list-style-type: none">• A training Logbook. Pass: <ul style="list-style-type: none">• Written test & Beginner level• Practical flight test part A & B indoor. Capability: <ul style="list-style-type: none">• Able to manipulate a Multicopter indoor with drone heading any directions.• Able to hover the Multicopter and fly paths without compass (head free mode). | Certificate |
| Junior (Outdoor) | Submission: <ul style="list-style-type: none">• A training Logbook Pass: <ul style="list-style-type: none">• Written test & Junior (Indoor) level• Practical flight test part C outdoor. Capability: <ul style="list-style-type: none">• Able to control a Multicopter indoor or outdoor with drone heading any directions. | Certificate |

| | | |
|--------------|---|---|
| | <ul style="list-style-type: none"> • Able to hover the Multicopter and fly paths with compass (head free mode), GPS and height sensor available. | |
| Intermediate | <p>Submission:</p> <ul style="list-style-type: none"> • A training Logbook. <p>Pass:</p> <ul style="list-style-type: none"> • Written test & Junior (Outdoor) • Practical flight test part C outdoor. <p>Capability:</p> <ul style="list-style-type: none"> • Able to control a Multicopter indoor or outdoor with drone heading any directions. • Able to hover the Multicopter and fly paths without using compass (head free mode), GPS and height sensor. | <ul style="list-style-type: none"> • Certificate |
| Senior | <p>Submission</p> <ul style="list-style-type: none"> • A training Logbook. <p>Pass:</p> <ul style="list-style-type: none"> • Written test & Intermediate level. • Practical flight test part D outdoor. <p>Capability:</p> <ul style="list-style-type: none"> • Able to control a Multicopter indoor or outdoor with drone heading any directions. • Able to hover the Multicopter and fly complicated paths without using compass (head free mode), GPS and height sensor. <p>Remarks: Distinction will be given to trainees of high performance.</p> | <ul style="list-style-type: none"> • Certificate |
| Coach | <ul style="list-style-type: none"> • Pass the Senior level. • Attend coach level lecture. • 80% of flight training sessions attendance • Train up 5 trainees or more who can achieve the intermediate level test under the program. | <ul style="list-style-type: none"> • Certificate |

Code of Conduct

Trainees violate the following codes of conduct will be disqualified.

- a) Must follow the instructions of our instructors.
- b) Solo flight is straightly prohibited without the permission of our instructors.
- c) Never do any actions which may cause danger to others.
- d) Be honest during test, cheating on test is straightly prohibited
- e) Follow all the safety guidelines.

Dress code

Smart casual with sport shoes for non-HKACC members. Dressing should prevent sunburn.

Test arrangement

The test is divided into two parts:

Written test (common to both junior level & senior level certificate, multiple choice questions):

- a) History of Multicopter.
- b) Architecture of multicopter.
- c) Flying theory of multicopter.
- d) Safety measure of multicopter operation and battery handling.

Pass Mark

A trainee has to **pass the indoor practical flight test as well as the written test before taking the outdoor practical flight training**. The time in between two attempts of written test should be at least 5 days. Once you have passed the indoor practical flight test and written test, you will not be required to take the same test again.

Practical flight test

During the test, the applicant must complete the required flying missions in solo accordingly.

In all the tests, there will be at least two examiners, including the chief instructor.

- a) For the test from beginner to junior level, the applicant will get a pass if he/she can get 60 marks out of 100 and none of the specific flying mission gets marks less than 50.
- b) For the test from intermediate to senior level, the applicant will get a pass if he/she can get 70 marks out of 100 and none of the specific flying mission gets marks less than 60.

Arrangements during bad weather

For outdoor flight practice, the air field manager will check the whether the weather is appropriate or not, outdoor flight practice will be cancelled under the following condition:

- 1) Raining
- 2) Wind speed > 10 knots (~5m/s)
- 3) Tropical Cyclone Warning Signal No. 3 (or above)
- 4) Thunderstorm Warning in forced by Hong Kong Observatory
- 5) Strong Monsoon Signal in forced by Hong Kong Observatory
- 6) Any Rainstorm Warning in forced by Hong Kong Observatory

When Tropical Cyclone Warning Signal No. 8 (or above) or Black Rainstorm Signal is hoisted, the following arrangements will apply:

- a) **For indoor/outdoor classes and tests not yet started**

| | |
|---|---|
| If either of the warnings is hoisted or in force at or after "2 hours before the activity". | All classes and tests commencing will be cancelled automatically. |
|---|---|

- b) **For indoor/outdoor classes and tests already started**

| | |
|--|---|
| When Tropical Cyclone Warning Signal No. 8 or above is hoisted | <ul style="list-style-type: none">• All classes will be suspended immediately.• All tests will continue until the end of that examination session. |
| When Black Rainstorm Signal is hoisted | <ul style="list-style-type: none">• All classes and tests, except those held outdoors, will continue. |

| | |
|--|---|
| | <ul style="list-style-type: none">• For outdoor classes and tests, the responsible staff members on the spot should suspend the activities immediately, ensure that all trainee are taken to a safe place, and remain there until it is safe for them to return home. |
|--|---|

When Tropical Cyclone Warning Signal No. 3 or below or Red or Amber Rainstorm Signal is in force, it should be assumed that all indoor classes and tests will be held as scheduled unless an announcement to the contrary has been made by the organization.

c) For outdoor activity not yet started

Before outdoor activity, the chief instructor will check whether the weather condition is appropriate for UAV flight training, e.g. raining or wind speed. The result will be announced through WhatsApp group of the specific class.

Application form
(Multicopter UAV Pilot Certificate Program)

| | | |
|---|--|--|
| Name (English) | _____ | <div style="border: 1px solid black; padding: 20px; width: 100%;">Recent Photo (Mandatory) X 2</div> |
| Name (Chinese) | _____ | |
| Gender | _____ Marital status _____ | |
| Date of birth | _____ (enter as yyyy-mm-dd) | |
| HKID Card | _____ () | |
| *HKACC member No. /University No./ HKIE/ HKIS member No.: | _____ | |
| Age: | _____ Telephone (Home)_____ | |
| Education Level | _____ (Office)_____ | |
| Occupation/ Position | _____ (Mobile)_____ | |
| Company/ College | _____ | |
| Email address (Primary, with large capacity)** | _____ | |
| Email address (Secondary) | _____ | |
| Home address | _____ _____ _____ | |
| In case of emergency | 1. Contact: _____ Relationship: _____ Telephone (Mobile): _____ | |
| | 2. Contact: _____ Relationship: _____ Telephone (Mobile): _____ | |
| Previous experience on RC model flying: | _____ _____ _____ | |

* Please circle the correct type

** This is mandatory as official course notice will be distributed via e-mail

The information collected from you will be used for the purpose of processing your application and communication only. We will not provide your personal data to third parties for direct marketing or other unrelated purposes without your consent.

All application forms are required to reach HKACC HQ on or before the specific deadline directly or through email or fax.

Address: Headquarters, Hong Kong Air Cadet Corps, Sung Wong Toi Road, Kowloon City.

Tel: 27128900

Fax: 27156944

Email: uav.trg.1@gmail.com

Programme Fee

| Level of application | Prerequisite | Basic Course Charge (HK\$) | HKACC associate member fee |
|---|-------------------------------------|----------------------------|--|
| <input type="checkbox"/> Beginner to Junior Indoor | None | 800 | 30 (for non-HKACC member) |
| <input type="checkbox"/> Junior (Outdoor) to Senior | Passed the Junior Indoor level test | 600 | 30 (Free of charge for valid HKACC membership) |
| <input type="checkbox"/> Coach | Passed the Senior level test | 0 | 30 |

Notice: Please put a tick in the which shows your training level of application. For a new trainee, you should tick the “Beginner to Junior Indoor”. After passing the Junior Indoor level test, you can enter the “Junior (Outdoor) to Senior” part of the same class.

For non-HKACC member applicants, an associate membership fees of **HK\$30** will be charged for the application of HKACC Associate Member in addition to the aforementioned course fee.

After receiving an offer of a place in the programme, I will submit the total course fee (and Associate Membership*) fee of HK\$_____ by either sending cheque to HKACC HQ or through ATM to HKACC account within 5 working days. Otherwise, the offer will be cancelled automatically.

- a) Crossed cheque payable to “Hong Kong Air Cadet Corps”
- b) For ATM transfer, a pre-arrangement with HKACC HQ staff is required. The HSBC Deposit Slip/ATM Bank Transfer Slip (HSBC a/c 808-620280-007 “Hong Kong Air Cadet Corps” should be sent back to the HKACC HQ accordingly.

*Note that application form without photos attached will not be accepted.

And I understand that the programme fee will not be refunded once I have accepted the offer of a place in the programme.

I certify that the above information provided is accurate.

Date: _____

Applicant Signature: _____

Official Use

Application received on: _____ Date of interview (if appropriate): _____

Status : **Rejected / Approved**

Checked by : _____