**SAVITRIBAI PHULE
PUNE UNIVERSITY
(Formerly University of Pune)**

**DRONEACHARYA
AERIAL INNOVATIONS
LIMITED**

DRONEACHARYA ®
AERIAL INNOVATIONS

**Board of Studies,
Department of Technology**

Electronics & Electrical (EE) Technology

Curriculum Structure for

Professional Certification Programme

in

**DGCA CERTIFICATION COURSE FOR
REMOTELY PILOTED AIRCRAFT SYSTEM**

Course Name: Professional Certification Programme in

**DGCA CERTIFICATION COURSE FOR
REMOTELY PILOTED AIRCRAFT SYSTEM**

Compulsory Modules – 3

Duration: 7 DAYS

Course Intake: -   40

Course Mode: - Classroom (Hybrid)

Eligibility Criteria:

Education Background:- Minimum 10th pass

Age:- 18+

Student should have valid Indian Passport/Voting Card/Aadhar card/Driving license/ Ration card

Medical fitness certificate

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DRONEACHARYA AERIAL INNOVATIONS LIMITED

Department of Technology
Board of Studies, Electronics and Electrical Technology(EE)

Curriculum Structure for Professional Certification

Programme in

DGCA CERTIFICATION COURSE FOR
REMOTELY PILOTED AIRCRAFT SYSTEM

Sr. No.	Subject Code	Subject Name	Credits	Teaching Scheme (Theory)	Teaching Scheme (Practical)
1	DCCRPAS1	FUNDAMENTALS OF DRONES	1	√	
2	DCCRPAS2	SIMULATOR AND FLYING	1	√	√
3	DCCRPAS3	EXAMINATION	2	√	√
		Total Course Credits	4		

TAKEAWAYS AFTER COMPLETION OF (DCCRPAS) COURSE

The essential information, abilities, and professionalism needed to operate drones safely and successfully for a variety of applications are what you should take away most from DGCA approved Drone Remote Pilot Training. A thorough overview of drone technology, flight principles, and airspace laws is provided through this programme, enabling participants to maneuver through challenging operational settings while adhering to safety and legal standards. Graduates of this training programme are skilled in flight planning, risk assessment, and emergency procedures. They also have the knowledge and experience necessary to operate drones in an ethical and responsible manner, making them competent remote pilots with the potential to contribute to a variety of industries and applications.After passing the exam, the student will acquire drone pilot certification, which entitles them to legally fly drones in India for the following ten years.

DCCRPAS1 : FUNDAMENTALS OF DRONES

Learning Outcomes

The goal of this module is to give students a comprehensive grasp of drone technology and use. Students will learn the fundamentals of drone operation in-depth, including the laws and rules established by the DGCA for safe drone operation. They will also become well-versed in the fundamentals of flying. They will gain the ability to use radio telephony and ATC procedures to communicate efficiently, ensuring adherence to airspace regulations. Students will also gain a complete understanding of the various UAV types and the maintenance techniques required for them, preparing them to operate drones responsibly, safely, and in compliance with legal standards for the duration of their operating lives.
The installation, use, and troubleshooting of various UAV payloads will be mastered by students, enabling them to modify drones for certain jobs and applications. In order to guarantee safety and abide by rules, they will also receive training on how to efficiently handle emergency situations and recognise potential threats during UAV operations. Students will gain knowledge of weather and meteorological aspects that may affect drone flights as well, enabling them to make wise decisions for safe and effective operations. Additionally, participants will learn how to evaluate and analyze picture and video data from drones, enabling useful insights and applications across a variety of industries and sectors, including agriculture, surveillance, and law enforcement.

Syllabus

Introduction of Drone, Types of drone Application, Future scope.

DGCA Rules & Regulation, Preliminary Classification, Authorization & RegulationOperation of UAS , Unmanned Air Traffic Control Management, General.

ATC: Working principle , Flight Profile &Pre flight , Landing & ApproachDrone Airspace , Navigation Chart.

RadioTelephony: General Procedure, Transmission Technique,Transmission Time, Phrase.

Basic principles of flight: Lift vs. related wind, Bernoulli's principle, Newton's laws of motion, Lift equation, Pressure distribution Weight, thrust & Drag, Ground effect.

Fixed Wing UAV: Force operating, Flight maneuver, Controls, Types.

MultiRotor UAV: Quadcopter physics, Block Diagram, Drone Components, Controls.

UAV Equipment & Maintenance: Field maintenance ,Operational maintenance , Manufacturer maintenance.

UAV Payload Installation & Utilization, Payload, Physics of Payload, Types of Payload.

UAV Emergency & identification, Handling, Risk Assessment, Phases of Risk Assessment, Identification & Handling.

Weather & Meteorology, Importance , Heat, Air Temperature, Air Pressure, Humidity.
Image & Video Interpretation,Visual Interpretation, Keys of Interpretation, Types, Image Scaling.

DCCRPAS2 : SIMULATOR AND FLYING

Learning Outcomes

A combined drone simulator and flying session's learning objectives are to give students a thorough hands-on education and practical drone operation competency. Through simulator training, students gain the fundamental drone piloting abilities necessary to practice flight maneuvers, emergency reactions, and flight planning without running the risk of having their actions have real-world repercussions. This foundation is built upon in later flying sessions, allowing students to use their expertise and knowledge in real drone operations. By the end of the course, students should be able to operate drones with assurance and safety, comprehend flight dynamics, navigate airspace, carry out practical missions, and follow safety procedures and regulations, ensuring they are ready for practical applications in a variety of industries.

Syllabus

Simulator flying: Introduction, Basic controls, Hurdle flying with time limit.

Field Flying: Basic controls, Flight checklist, Field flying, Demo flying.

Simulator flying: Recap, Image and video capture analysis.

Field flying: Flight checklist, Flight maneuvers square, circle, zoom in zoom out, Use of radio telephony on field.

Field flying: Basic controls , Flight checklist, Flying and capturing images and videos, Identifying risk and overcoming solutions while flying with critical situations, Log Book Filling.

DCCRPAS3: EXAMINATION

Learning Outcomes

Assessments using simulators give students a secure setting in which to hone their flying abilities and grasp flight maneuvers, emergency reactions, and flight planning. Exams for Drone theory gauge candidates' comprehension of key ideas in airspace management, safety procedures, and drone technology. The flying test assesses students' practical proficiency in actual drone operations, confirming they are capable of safely and confidently piloting drones, putting their theoretical knowledge to use in practical missions, and abiding by all safety and regulatory regulations. After completing this training, students should be able to operate drones responsibly, proficiently, and in compliance with the law in a variety of fields and applications.

Syllabus

Written exam: Objective, subjective.

Simulator flying: Test

Field flying: Project, Execution Report, Safety, Rules regulations, Risk management, Flight log, Practical question.