SAVITRIBAI PHULE PUNE UNIVERSITY
(Formerly University of Pune)

DRONEACHARYA AERIAL INNOVATIONS LIMITED

Board of Studies,
Department of Technology

Electronics & Electrical (EE) Technology

Curriculum Structure for

Professional Certification Programme

in

CERTIFICATE COURSE FOR DRONES IN DISASTER MANAGEMENT

Course Name: Professional Certification Programme in

CERTIFICATE COURSE FOR DRONES IN DISASTER MANAGEMENT

Compulsory Modules – 2

Duration: 5 DAYS

Course Intake: - 40

Course Mode: - Classroom (Hybrid)

Eligibility Criteria:

10th Pass
Education Background:- Should able to read,Understand& write English/Hindi

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Curriculum Structure for Professional Certification

Programme in

CERTIFICATE COURSE FOR DRONES IN DISASTER MANAGEMENT

Sr. No.	Subject Code	Subject Name	Credits	Teaching Scheme (Theory)	Teaching Scheme (Practical)
1	CCDDM1	FUNDAMENTALS OF DRONES AND DISASTER	1	√	√
2	CCDDM2	SIMULATOR AND FLYING SESSION	2		√
		Total Course Credits	3		

TAKEAWAYS AFTER COMPLETION OF (CCDDM) COURSE

Students will be well-equipped to use drone technology for preparedness, response, and recovery activities following a disaster. They will be skilled at using drones for situational awareness, damage assessment, search and rescue operations, and quick aerial evaluations during disasters. Additionally, to ensure compliance and responsible operation, students will comprehend the legal and ethical frameworks related to drone use in catastrophe scenarios. They will also be able to analyze and understand data from drones to help with disaster management decisions and resource allocation. By utilizing drone capabilities to increase efficiency, safety, and effectiveness in reducing the effects of disasters on communities and the environment, this course equips students to have a meaningful impact on disaster response and recovery.

CCDDM1: FUNDAMENTALS OF DRONES AND DISASTER

Learning Outcomes

This theory module will provide students with a comprehensive understanding of how drones can be applied to disaster preparation, response, and recovery. Students will learn about the capabilities and limitations of drone technology in emergency situations. In areas such as rapid damage assessment, search and rescue operations, and real-time situational awareness, they will also learn to assess disaster-related challenges and formulate effective drone-based strategies to resolve them. In addition, students will gain an understanding of the ethical and regulatory considerations involved in deploying drones during disasters, ensuring their use is compliant. Students should be able to implement their theoretical understanding of drone applications to real-world disaster management scenarios by the end of the course, thereby enhancing their ability to contribute to effective and life-saving disaster response efforts.

SYLLABUS

Introduction to Drones: Types of Drones.

DGCA Classification: Categories & Subcategories ATC Procedure, Telephony.

Introduction to Disaster: Types of Disaster Task 1.

Disaster Mitigation: Types of Disaster, Pre-Disaster Activity, During Disaster Activity, Post Disaster Activity

Disaster Mitigation Task 2: Mitigation Authority, National Level, Mitigation Authority: State Level, Mitigation Authority: District Level.

Disaster Mitigation: Mitigation Forces: Central, Mitigation Forces: State Level.

Introductions to Drones: Quadcopter & Fix-wing, Components , Checklist.

Introduction to Drone Sensors: Various sensors used for Disaster Management.

CCDDM2: SIMULATOR AND FLYING SESSION

Learning Outcomes

The learning outcomes of simulator and flight sessions for drones in disaster mitigation include equipping students with the essential practical and applied skills for effective emergency response. Students will develop proficiency in piloting drones in simulated disaster scenarios through simulator training, honing their flight skills, emergency response capabilities, and mission planning in a secure and controlled environment. Subsequent flying sessions will provide practical training in deploying drones for real-world disaster mitigation, including aerial reconnaissance, damage assessment, and search and rescue operations. Students will learn to adapt their theoretical knowledge to dynamic catastrophe situations, ensuring that they can operate drones with confidence and safety, collect vital data, and contribute to disaster management efforts. This training will enable students to become valuable assets in disaster mitigation by applying drone technology to improve situational awareness and response coordination, ultimately saving lives and minimizing the impact of disasters on affected communities.

SYLLABUS

Simulator: Introduction to Software, Basic Controls, Demo flying, Flying.

Simulator Session: Basic controls, Free Flying.

Simulator flying: Recap, Basic controls,Task flying, Take-off and landing.

Field flying: Introduction to RPA, Checklist, Demo Flying.

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

Flying Task 1: Search & Rescue Using Drones ,Checklist,Flying

Flying Task 2: Logistic Deliver using Drones, Checklist, Flying.

Flying Task 3: Structural Inspection using Drones, Checklist, Flying.

Flying Task 4: Mission Planning for Data Capturing, Checklist, Flying.