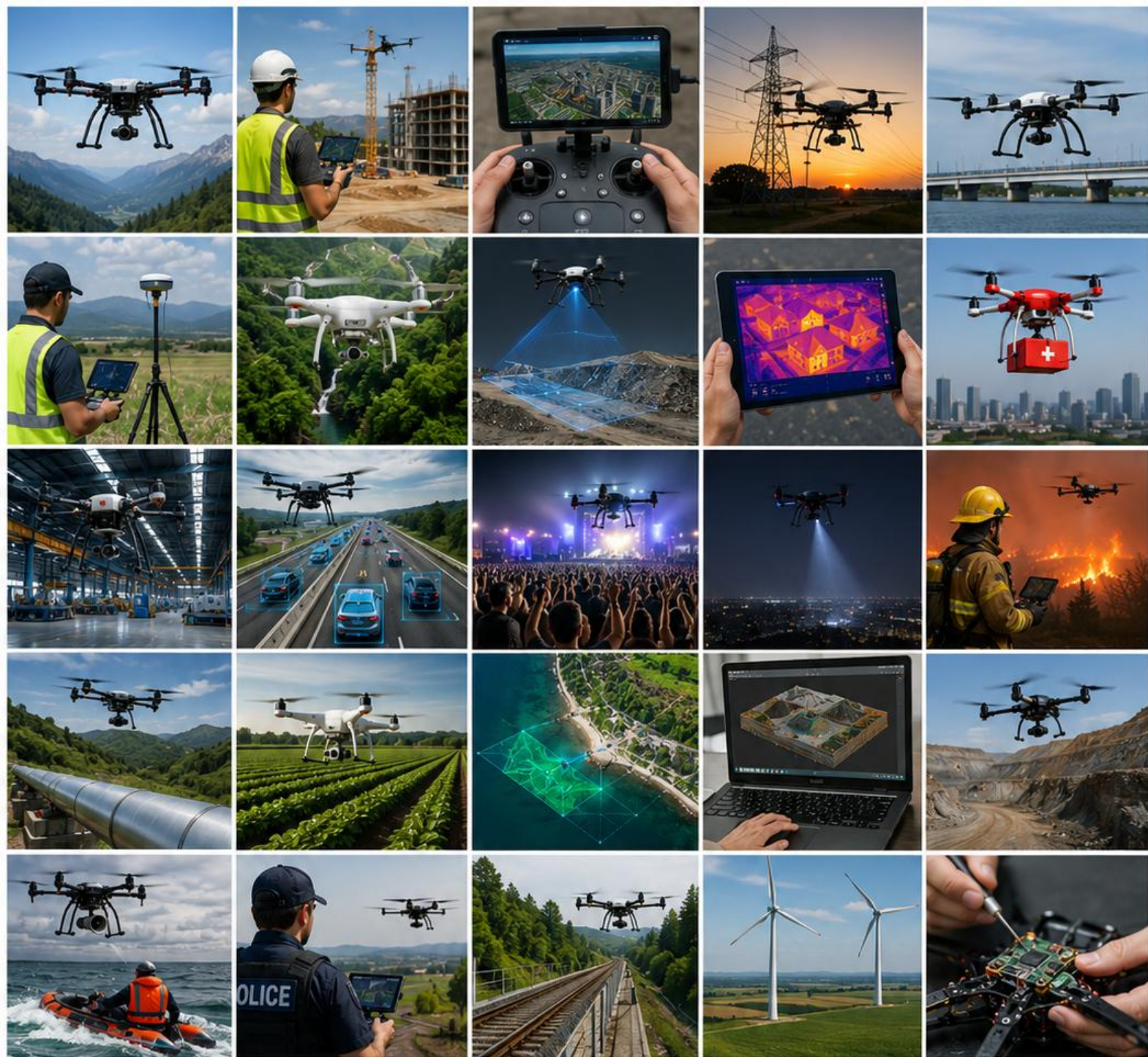




ADVANCED DIPLOMA IN

DRONE TECHNOLOGY, MANUFACTURING & OPERATIONS



STARLIKS CAMPUS

Contents

Your Pathway to Professional Excellence	4
Shape the Future with Drone Technology, Manufacturing & Flight Innovation	5
PROGRAM OVERVIEW	6
MODULE 01 — DRONE MANUFACTURING & UAV SYSTEMS	8
MONTH 01 — INTRODUCTION TO UAV SYSTEMS & ELECTRONICS	9
WEEK 01 — INTRODUCTION TO UAVS & DRONE TECHNOLOGY	9
WEEK 02 — UAV DESIGN & ENGINEERING PRINCIPLES	10
WEEK 03 — UAV ELECTRONICS & POWER SYSTEMS	12
WEEK 04 — UAV COMMUNICATION & CONTROL SYSTEMS	13
MONTH 02 — UAV ASSEMBLY & CONFIGURATION	15
WEEK 05 — DRONE FRAME ASSEMBLY & MECHANICAL INTEGRATION	15
WEEK 06 — MOTORS, PROPELLERS & PROPULSION SYSTEMS	15
WEEK 07 — FLIGHT CONTROLLER INSTALLATION & SENSOR CALIBRATION	16
WEEK 08 — FIRMWARE INSTALLATION & UAV CONFIGURATION	16
MONTH 03 — TESTING, QUALITY CONTROL & AGRICULTURAL DRONE SYSTEMS	18
WEEK 09 — UAV TESTING & QUALITY ASSURANCE	18
WEEK 10 — AGRICULTURAL DRONE TECHNOLOGY	18
WEEK 11 — ADVANCED UAV SYSTEMS & EMERGING TECHNOLOGIES	19
WEEK 12 — UAV INDUSTRY STANDARDS & FINAL MANUFACTURING REVIEW	20
PHYSICAL PRACTICAL WORKSHOP — DRONE MANUFACTURING	21
DAY 01 — UAV ASSEMBLY WORKSHOP	21
DAY 02 — CONFIGURATION & TESTING WORKSHOP	21
MODULE 02 — DRONE PILOT TRAINING & FLIGHT OPERATIONS	22
MONTH 01 — AVIATION FUNDAMENTALS & FLIGHT SAFETY	23
WEEK 01 — INTRODUCTION TO DRONE FLIGHT OPERATIONS	23
WEEK 02 — FLIGHT SAFETY & RISK MANAGEMENT	23
WEEK 03 — FLIGHT PLANNING & NAVIGATION	23
WEEK 04 — UAV REGULATIONS & COMPLIANCE	24
MONTH 02 — FLIGHT OPERATIONS & COMMERCIAL APPLICATIONS	25
WEEK 05 — BASIC FLIGHT OPERATIONS	25
WEEK 06 — ADVANCED FLIGHT OPERATIONS	25
WEEK 07 — COMMERCIAL & AGRICULTURAL DRONE OPERATIONS	25
WEEK 08 — FLIGHT SIMULATOR & OPERATIONAL REVIEW	26
PHYSICAL PRACTICAL WORKSHOP — DRONE PILOT TRAINING	27
DAY 01 — BASIC FLIGHT TRAINING	27

DAY 02 — ADVANCED MISSION OPERATIONS.....	27
MODULE 03 — DRONE SERVICING & MAINTENANCE	28
WEEK 01 — PREVENTIVE MAINTENANCE SYSTEMS.....	29
WEEK 02 — TROUBLESHOOTING & FAULT DIAGNOSIS.....	29
WEEK 03 — REPAIR PROCEDURES & CALIBRATION	29
WEEK 04 — SERVICE CENTER OPERATIONS & TECHNICAL DOCUMENTATION	30
PHYSICAL PRACTICAL WORKSHOP — DRONE SERVICING	30
DAY 01 — MAINTENANCE PRACTICALS	30
DAY 02 — REPAIR & TROUBLESHOOTING PRACTICALS.....	30
ENTREPRENEURSHIP & FINANCIAL MANAGEMENT MODULE	31
SESSION 01 — STARTING A DRONE BUSINESS	31
SESSION 02 — FINANCIAL MANAGEMENT FOR DRONE ENTREPRENEURS	31
CAPSTONE PROJECT REQUIREMENTS	32
ASSESSMENT STRUCTURE	32
EXPECTED LEARNING OUTCOMES	32
CAREER OPPORTUNITIES	33
RECOMMENDED FACILITIES & EQUIPMENT.....	34
Training Equipment	34
Software Requirements	34
Workshop Equipment.....	34
CONCLUSION	35



Your Pathway to Professional Excellence

STARLIKS CAMPUS

Who We Are

Starliks Campus (PV 00254887) is a professional training institute dedicated to developing skilled, confident, and industry-ready individuals for today's competitive industries. We provide high-quality, career-focused education and practical training programs designed to meet modern industry requirements while preparing students for future opportunities both locally and internationally.

At Starliks Campus, we believe education should combine academic knowledge with practical experience. Our programs are designed with hands-on training, workshops, live projects, and real-world learning experiences that help students develop valuable technical and professional skills. Our goal is to bridge the gap between education and employment by preparing students to confidently enter the workforce, pursue higher studies, or start their own businesses.

Our courses are conducted by qualified lecturers, experienced trainers, and industry professionals who bring both academic and practical expertise into the classroom. Through innovative teaching methods and industry-oriented training, we create an engaging learning environment that encourages creativity, professionalism, and continuous growth.

Why Choose Starliks Campus

- Industry-Oriented Programs aligned with current market demands
- Practical Learning Methods with hands-on training and real-world applications
- Experienced Lecturers and Industry Experts guiding every stage of learning
- Career-Focused Education supporting employment and entrepreneurship opportunities
- Modern Learning Environment that encourages innovation and professional development

Our Vision

To become a leading professional education and training institute that develops future-ready professionals capable of contributing positively to Sri Lanka's growth and the global workforce.

Our Mission

To provide practical, innovative, and high-quality education that empowers individuals with the skills, confidence, and professional competence needed for career success and lifelong achievement.

At Starliks Campus, we are committed to shaping the next generation of professionals, innovators, and leaders by providing education that creates real opportunities and lasting success.

Shape the Future with Drone Technology, Manufacturing & Flight Innovation

The drone industry is rapidly becoming one of the world's most advanced and high-demand technology sectors, creating exciting career and business opportunities across agriculture, engineering, aviation, logistics, surveying, media, security, and smart automation industries. As modern industries continue to adopt unmanned aerial technologies, skilled drone professionals are becoming highly valuable both locally and internationally.

Studying Drone Manufacturing provides students with practical and technical expertise in UAV assembly, electronics, flight controller systems, GPS technologies, power systems, and advanced drone engineering concepts. Learners gain hands-on knowledge in designing, building, configuring, and testing modern drone systems, preparing them for careers in the growing drone manufacturing and technology sector.

Drone Riding and Flight Operations training develop essential aviation and operational competencies required for real-world commercial drone applications. Students learn flight planning, safety procedures, autonomous navigation, aerial operations, and mission execution for industries such as agricultural spraying, crop monitoring, aerial mapping, surveying, photography, inspections, and surveillance. These skills are highly demanded in the modern precision agriculture and industrial automation industries.

Drone Servicing and Maintenance training equips learners with critical troubleshooting, repair, calibration, and technical support skills required to maintain UAV systems efficiently and safely. Students develop the ability to diagnose technical faults, perform preventive maintenance, recover firmware systems, and support operational drone fleets, creating strong career opportunities within the expanding UAV service industry.

With the increasing global adoption of agricultural drones and smart farming technologies, students specializing in drone technology become part of the next generation of precision agriculture and future technology professionals. This field not only offers excellent employment opportunities, but also empowers learners to launch their own drone-related businesses and become successful entrepreneurs in one of the fastest-growing technology industries in the world.

ADVANCED DIPLOMA IN DRONE TECHNOLOGY, UAV MANUFACTURING & OPERATIONS

Starliks Campus

PROGRAM OVERVIEW

The Advanced Diploma in Drone Technology, UAV Manufacturing & Operations is a comprehensive professional qualification designed to develop industry-ready drone professionals specializing in:

- UAV Manufacturing & Assembly
- Agricultural Drone Technology
- Drone Flight Operations
- Drone Servicing & Maintenance
- UAV Electronics & Embedded Systems
- Commercial Drone Applications
- Agricultural Spraying Operations
- UAV Mapping & Surveying
- Drone Entrepreneurship & Business Management

The program is designed with major emphasis on:

Drone Manufacturing & Agricultural Drone Applications

The course structure combines:

- Live online instructor-led theory sessions
- LMS recorded learning activities
- Technical demonstrations
- Guided assignments and research
- Flight simulator operations
- Physical workshop practical sessions
- Capstone project development
- Self-directed learning and technical documentation

PROGRAM DELIVERY MODEL

Component	Mode
Live Theory Sessions	Online
LMS Recorded Learning	Online
Practical Workshops	Physical
Assignments & Assessments	Guided Self-Learning
Simulator Training	Online / Lab
Capstone Projects	Practical
Final Evaluation	Theory + Practical + Viva

LIVE THEORY SESSION SCHEDULE

Schedule	Time
Every Saturday	6.00 PM – 8.30 PM
Additional Special Sessions (if required)	Weekday 6.00 PM – 8.30 PM

PRACTICAL SESSION SCHEDULE

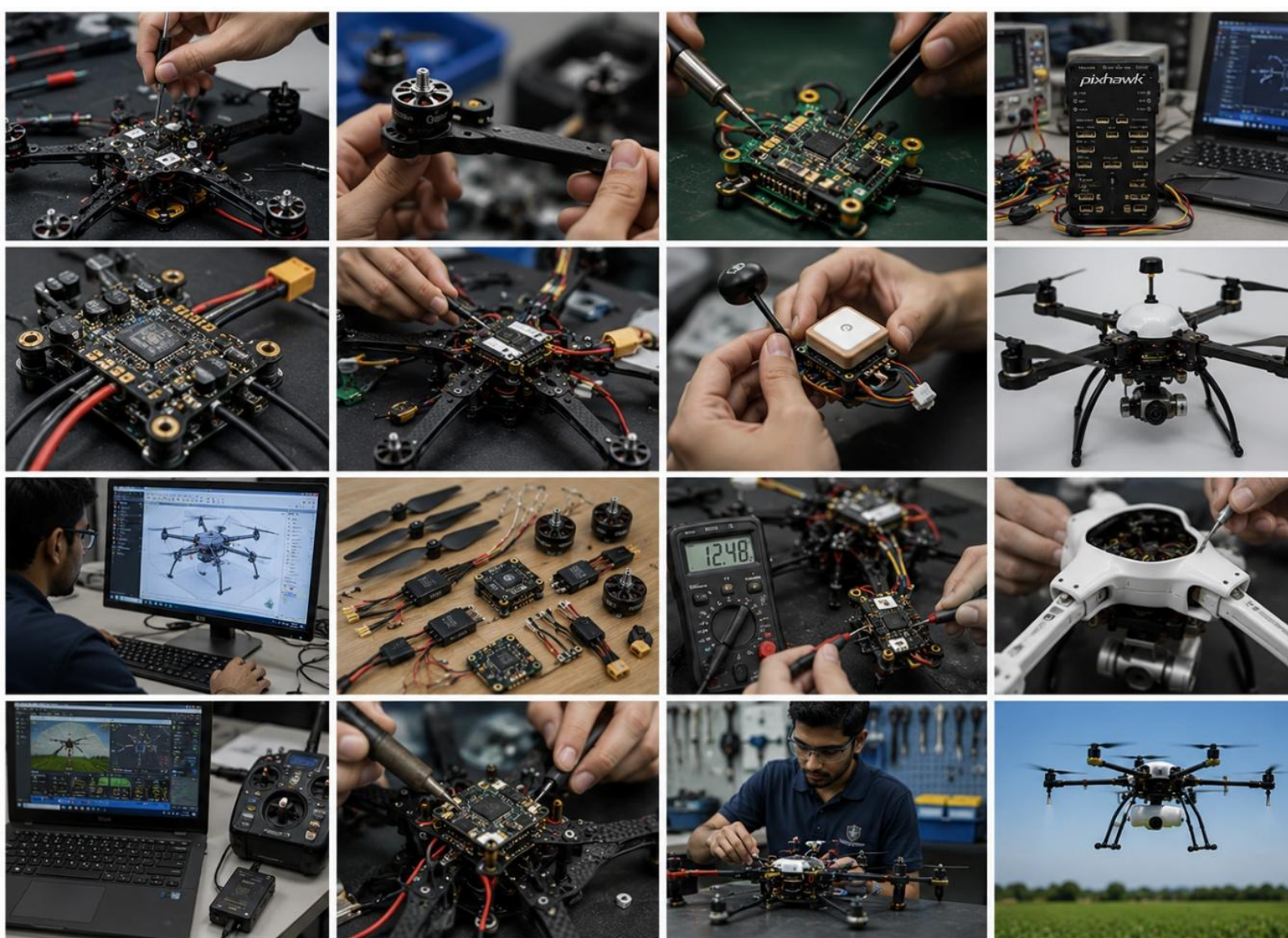
Schedule	Time
Physical Workshop Days	8.30 AM – 4.30 PM

MODULE 01 — DRONE MANUFACTURING & UAV SYSTEMS

MAIN SPECIALIZATION MODULE

Duration Structure

Component	Hours
Live Online Theory	30
LMS Recorded Learning	160
Guided Assignments & Research	120
Physical Workshops	16
Capstone Project	80
Total	406



LIVE ONLINE THEORY CONTENT

MONTH 01 — INTRODUCTION TO UAV SYSTEMS & ELECTRONICS

WEEK 01 — INTRODUCTION TO UAVS & DRONE TECHNOLOGY

Main Topics

1. Introduction to UAVs (Unmanned Aerial Vehicles)

- History and evolution of UAVs
- Modern drone industry overview
- Global UAV technology trends
- Future of autonomous drone systems

2. Types of UAV Platforms

- Fixed-wing drones
- Multi-rotor drones
- Hybrid UAV systems
- VTOL systems
- Industrial drone categories

3. Key Components of UAV Systems

- UAV frames
- Brushless motors
- Propellers
- ESC systems
- Flight controllers
- GPS modules
- Telemetry systems
- Batteries and power systems

4. UAV Applications

- Agricultural spraying operations
- Crop monitoring and mapping

- Commercial photography
- Surveying and inspection
- Delivery systems
- Security and surveillance
- Infrastructure inspection
- Emergency response operations

5. Basic Aerodynamics

- Principles of flight
- Lift, thrust, drag and weight
- Stability concepts
- Rotor dynamics

LMS Learning Activities

- Introduction video lectures
- UAV industry documentary reviews
- Agricultural drone technology demonstrations
- Reading material: UAV Fundamentals

Guided Assignment

- Research report on UAV types and industrial applications
- Agricultural drone case study review

WEEK 02 — UAV DESIGN & ENGINEERING PRINCIPLES

Main Topics

1. UAV Structural Design

- Frame architecture concepts
- Weight balancing
- Structural integrity
- Payload considerations
- Center of gravity calculations

2. UAV Materials & Manufacturing

- Carbon fiber systems
- Aluminum structures
- Composite materials
- Plastic and polymer components
- Lightweight construction techniques

3. Aerodynamic Design Principles

- Propeller efficiency
- Airflow dynamics
- Drag reduction concepts
- Performance optimization

4. Electrical System Architecture

- Wiring systems
- Power distribution boards
- Connectors and soldering standards
- Signal routing

5. Agricultural Drone Design Considerations

- Spraying tank integration
- Pump systems
- Nozzle systems
- Payload optimization for agricultural applications

LMS Learning Activities

- Technical design tutorials
- Manufacturing process demonstrations
- Agricultural spraying drone videos

Guided Assignment

- Create a conceptual design layout for a quadcopter UAV
- Prepare material selection analysis report

WEEK 03 — UAV ELECTRONICS & POWER SYSTEMS

Main Topics

1. Basic Electronics for UAV Systems

- Voltage, current and resistance
- Electronic circuit fundamentals
- PCB systems
- Signal transmission concepts

2. Drone Power Systems

- LiPo battery technology
- Battery charging systems
- Battery safety procedures
- Power optimization methods

3. ESC Systems

- ESC architecture
- PWM signals
- Motor control principles
- ESC calibration

4. Electrical Safety & Protection

- Overcurrent protection
- Short-circuit prevention
- Thermal management
- Safe handling procedures

5. Agricultural UAV Power Management

- High-capacity battery systems
- Load balancing for spraying drones
- Flight endurance optimization

LMS Learning Activities

- Battery management tutorials
- ESC configuration demonstrations

- UAV electrical troubleshooting videos

Guided Assignment

- Power system analysis exercise
 - UAV battery performance comparison study
-

WEEK 04 — UAV COMMUNICATION & CONTROL SYSTEMS

Main Topics

1. Flight Controller Systems

- Pixhawk flight controller overview
- Flight stabilization systems
- Sensor integration
- IMU systems

2. GPS & Navigation Systems

- GPS principles
- RTK systems
- Navigation accuracy concepts
- Waypoint systems

3. Telemetry & Communication Systems

- Radio communication systems
- Frequency systems
- Signal transmission
- Telemetry monitoring

4. Remote Controller Configuration

- Radio transmitters and receivers
- Channel mapping
- Signal calibration
- Failsafe settings

5. Agricultural Navigation Systems

- Automated spraying routes
- Precision agriculture mapping
- GPS field operations

LMS Learning Activities

- Pixhawk setup demonstrations
- Telemetry configuration tutorials
- GPS mapping demonstrations

Guided Assignment

- Prepare UAV communication system diagram
- Research agricultural GPS applications

MONTH 02 — UAV ASSEMBLY & CONFIGURATION

WEEK 05 — DRONE FRAME ASSEMBLY & MECHANICAL INTEGRATION

Main Topics

- Frame assembly procedures
- Arm installation techniques
- Landing gear systems
- Mounting systems
- Structural alignment
- Vibration reduction methods
- Mechanical safety standards

Agricultural Focus

- Sprayer mounting systems
- Tank balancing systems
- Agricultural payload structures

Assignment

- UAV assembly workflow preparation
-

WEEK 06 — MOTORS, PROPELLERS & PROPULSION SYSTEMS

Main Topics

- Brushless motor technology
- Motor KV ratings
- Propeller selection techniques
- Thrust calculations
- Power-to-weight ratio
- Propulsion efficiency
- Motor maintenance concepts

Agricultural Focus

- Heavy-lift propulsion systems

- Agricultural spraying drone motors
- High-efficiency propeller systems

Assignment

- Motor and propeller matching exercise
-

WEEK 07 — FLIGHT CONTROLLER INSTALLATION & SENSOR CALIBRATION

Main Topics

- Flight controller installation
- Wiring and connectivity
- Accelerometer calibration
- Compass calibration
- Gyroscope systems
- GPS integration
- Sensor troubleshooting

Assignment

- Sensor calibration report preparation
-

WEEK 08 — FIRMWARE INSTALLATION & UAV CONFIGURATION

Main Topics

- Mission Planner software
- ArduPilot fundamentals
- Firmware installation
- Parameter configuration
- Flight mode configuration
- Failsafe setup
- Flight data monitoring

Agricultural Focus

- Autonomous spraying route setup
-

- Field mission planning
- Precision spraying configuration

Assignment

- Mission Planner configuration exercise

MONTH 03 — TESTING, QUALITY CONTROL & AGRICULTURAL DRONE SYSTEMS

WEEK 09 — UAV TESTING & QUALITY ASSURANCE

Main Topics

- Pre-flight inspections
- Quality assurance procedures
- System validation
- Flight readiness testing
- Safety inspections
- Documentation standards

Assignment

- UAV quality inspection checklist development
-

WEEK 10 — AGRICULTURAL DRONE TECHNOLOGY

Main Topics

1. Introduction to Agricultural Drones

- Smart farming concepts
- Precision agriculture systems
- Agricultural UAV market overview

2. Agricultural Spraying Systems

- Spraying mechanisms
- Pump systems
- Nozzle technologies
- Flow control systems
- Chemical distribution principles

3. Crop Monitoring Systems

- NDVI concepts
- Thermal imaging basics
- Crop health monitoring
- Data collection methods

4. Agricultural Drone Operations

- Field mapping procedures
- Automated spraying routes
- Obstacle avoidance concepts
- Safety procedures for chemical spraying

LMS Learning Activities

- Agricultural spraying demonstrations
- Crop mapping video tutorials
- Smart farming case studies

Assignment

- Agricultural drone business opportunity analysis

WEEK 11 — ADVANCED UAV SYSTEMS & EMERGING TECHNOLOGIES

Main Topics

- AI in drone systems
- Autonomous UAV concepts
- Obstacle avoidance systems
- LiDAR applications
- Computer vision concepts
- Swarm drone technologies
- Future trends in UAV manufacturing

Assignment

- Research report on future UAV technologies

WEEK 12 — UAV INDUSTRY STANDARDS & FINAL MANUFACTURING REVIEW

Main Topics

- UAV safety standards
- Manufacturing quality standards
- Sri Lankan UAV regulations overview
- Documentation and reporting
- Industry best practices
- Final manufacturing review session

Assignment

- Final manufacturing technical documentation

PHYSICAL PRACTICAL WORKSHOP — DRONE MANUFACTURING

Duration: 2 Full Days

DAY 01 — UAV ASSEMBLY WORKSHOP

8.30 AM – 4.30 PM

Practical Activities

- Frame assembly
 - Motor installation
 - ESC wiring
 - Power distribution setup
 - Soldering practicals
 - Battery installation
 - Mechanical balancing
 - Safety inspections
-

DAY 02 — CONFIGURATION & TESTING WORKSHOP

8.30 AM – 4.30 PM

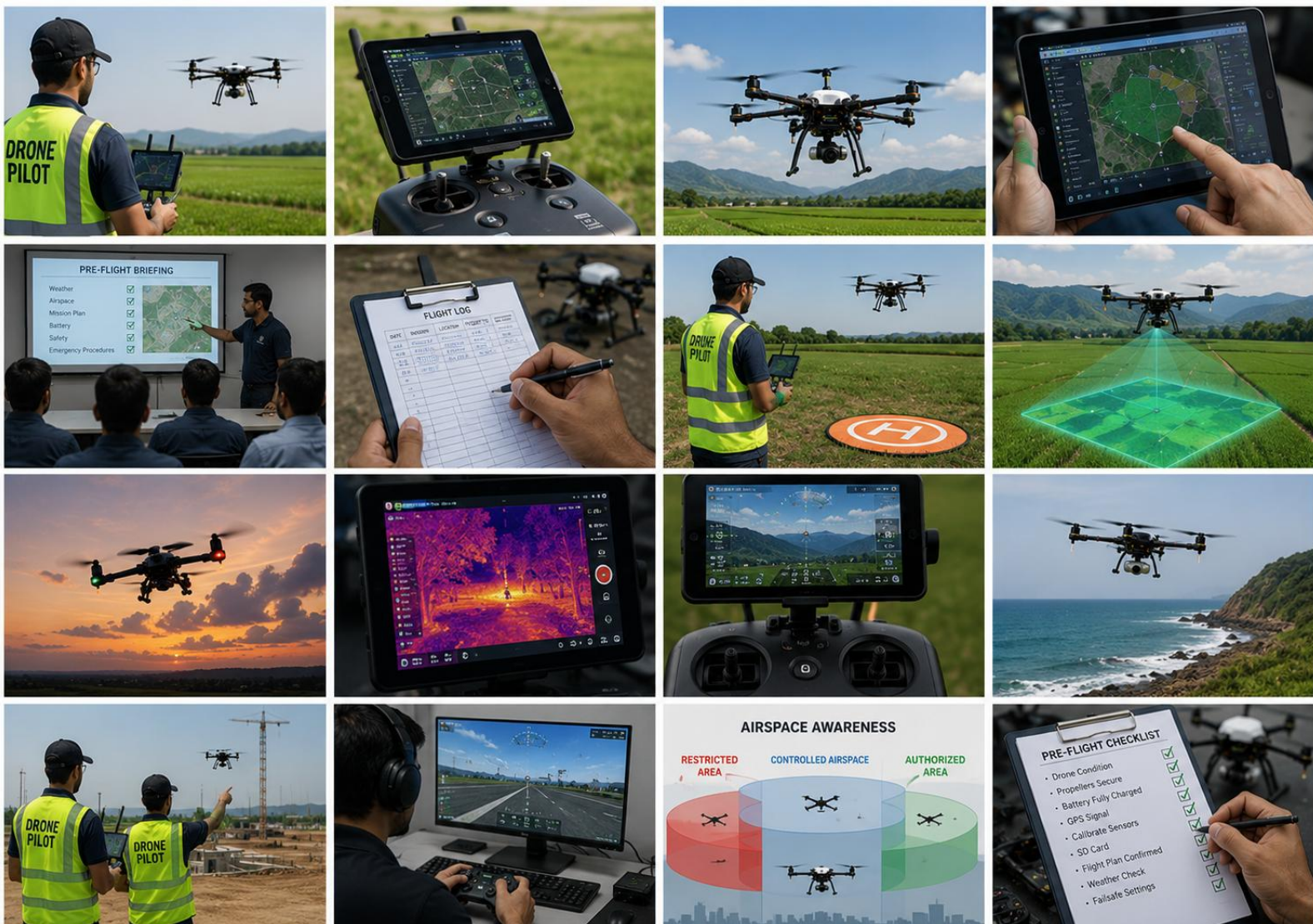
Practical Activities

- Pixhawk installation
- Firmware flashing
- Mission Planner setup
- GPS configuration
- Radio calibration
- Sensor calibration
- Test procedures
- Troubleshooting exercises

MODULE 02 — DRONE PILOT TRAINING & FLIGHT OPERATIONS

Duration Structure

Component	Hours
Live Online Theory	20
LMS Recorded Learning	125
Guided Assignments & Research	85
Practical Workshops	16
Flight Simulator Training	70
Capstone Project	30
Total	346



LIVE ONLINE THEORY CONTENT

MONTH 01 — AVIATION FUNDAMENTALS & FLIGHT SAFETY

WEEK 01 — INTRODUCTION TO DRONE FLIGHT OPERATIONS

Main Topics

- Aviation fundamentals
 - Principles of flight
 - Drone flight terminology
 - Airspace concepts
 - UAV operational categories
-

WEEK 02 — FLIGHT SAFETY & RISK MANAGEMENT

Main Topics

- Pre-flight inspections
- Risk assessments
- Weather considerations
- Emergency procedures
- Safety management systems

Agricultural Focus

- Chemical spraying safety
 - Safe field operations
 - Environmental considerations
-

WEEK 03 — FLIGHT PLANNING & NAVIGATION

Main Topics

- GPS navigation
- Waypoint missions
- Mapping concepts
- Route planning
- Autonomous mission planning

Agricultural Focus

- Agricultural field mapping
 - Crop survey missions
 - Precision field coverage planning
-

WEEK 04 — UAV REGULATIONS & COMPLIANCE

Main Topics

- Sri Lankan UAV regulations
- Privacy laws
- Operational permissions
- Safety compliance
- Documentation requirements

MONTH 02 — FLIGHT OPERATIONS & COMMERCIAL APPLICATIONS

WEEK 05 — BASIC FLIGHT OPERATIONS

Main Topics

- Takeoff procedures
 - Hovering techniques
 - Orientation control
 - Landing procedures
 - Manual flight operations
-

WEEK 06 — ADVANCED FLIGHT OPERATIONS

Main Topics

- GPS flight modes
 - Return-to-home functions
 - Autonomous missions
 - Obstacle awareness
 - Mission automation
-

WEEK 07 — COMMERCIAL & AGRICULTURAL DRONE OPERATIONS

Main Topics

- Agricultural spraying missions
- Crop monitoring operations
- Surveying and mapping
- Inspection missions
- Commercial drone services

WEEK 08 — FLIGHT SIMULATOR & OPERATIONAL REVIEW

Main Topics

- Flight simulator operations
- Emergency simulations
- Mission troubleshooting
- Flight assessment preparation

PHYSICAL PRACTICAL WORKSHOP — DRONE PILOT TRAINING

Duration: 2 Full Days

DAY 01 — BASIC FLIGHT TRAINING

Practical Activities

- Pre-flight inspection
 - Basic controls
 - Hovering practice
 - Takeoff and landing
 - Orientation exercises
-

DAY 02 — ADVANCED MISSION OPERATIONS

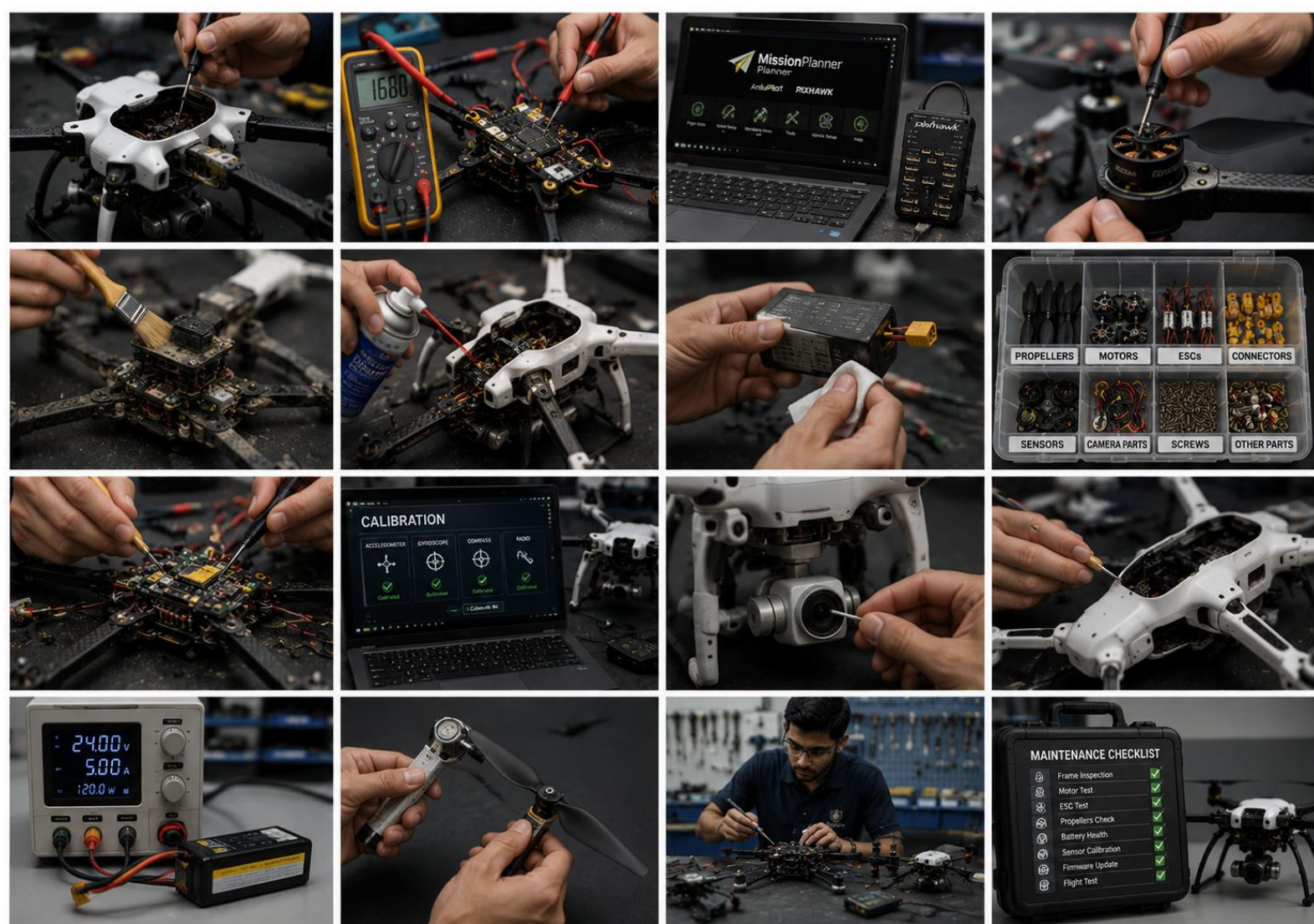
Practical Activities

- GPS missions
- Waypoint navigation
- Agricultural route simulation
- Emergency handling
- Mission assessments

MODULE 03 — DRONE SERVICING & MAINTENANCE

Duration Structure

Component	Hours
Live Online Theory	10
LMS Recorded Learning	75
Guided Assignments & Research	55
Practical Workshops	16
Capstone Project	30
Total	186



LIVE ONLINE THEORY CONTENT

WEEK 01 — PREVENTIVE MAINTENANCE SYSTEMS

Main Topics

- Maintenance schedules
- Cleaning procedures
- Inspection standards
- Preventive maintenance planning
- Battery maintenance

WEEK 02 — TROUBLESHOOTING & FAULT DIAGNOSIS

Main Topics

- Motor failures
- ESC troubleshooting
- GPS issues
- Wiring faults
- Communication failures
- Sensor troubleshooting

WEEK 03 — REPAIR PROCEDURES & CALIBRATION

Main Topics

- Component replacement
- Firmware recovery
- Sensor calibration
- Flight controller repairs
- Battery replacement

WEEK 04 — SERVICE CENTER OPERATIONS & TECHNICAL DOCUMENTATION

Main Topics

- Service workflows
 - Maintenance reporting
 - Customer handling
 - Technical documentation
 - Service quality standards
-

PHYSICAL PRACTICAL WORKSHOP — DRONE SERVICING

Duration: 2 Full Days

DAY 01 — MAINTENANCE PRACTICALS

Practical Activities

- Drone inspection
 - Cleaning procedures
 - Battery testing
 - Motor servicing
 - Preventive maintenance
-

DAY 02 — REPAIR & TROUBLESHOOTING PRACTICALS

Practical Activities

- ESC replacement
- Wiring repairs
- Firmware recovery
- Sensor calibration
- Troubleshooting assessments

ENTREPRENEURSHIP & FINANCIAL MANAGEMENT MODULE

Total Duration: 3 Hours

SESSION 01 — STARTING A DRONE BUSINESS

Duration: 1.5 Hours

Main Topics

- Drone industry business opportunities
 - Agricultural drone service business models
 - Drone manufacturing startups
 - Drone spraying services
 - Pricing strategies
 - Client acquisition methods
 - Digital marketing concepts
 - Business registration procedures
-

SESSION 02 — FINANCIAL MANAGEMENT FOR DRONE ENTREPRENEURS

Duration: 1.5 Hours

Main Topics

- Basic accounting concepts
- Costing for drone manufacturing
- Agricultural spraying pricing models
- Profit calculations
- Cash flow management
- Budget preparation
- Financial planning basics

CAPSTONE PROJECT REQUIREMENTS

Students must complete at least ONE of the following:

- Build and configure a quadcopter UAV
- Design an agricultural spraying drone concept
- Conduct a simulated agricultural drone mission
- Prepare a drone servicing workflow system
- Develop a drone startup business plan
- Prepare a crop monitoring operational proposal

ASSESSMENT STRUCTURE

Assessment Type	Weightage
Theory Examination	30%
Practical Assessment	35%
Assignments & Research	20%
Final Project & Viva	15%



EXPECTED LEARNING OUTCOMES

Upon successful completion of the program, learners will be able to:

- Understand UAV technology and drone systems
 - Assemble and configure drones using Pixhawk systems
 - Perform drone maintenance and troubleshooting
 - Operate drones safely and professionally
 - Conduct agricultural drone operations
 - Understand crop spraying and mapping concepts
 - Use Mission Planner and flight control software
 - Configure UAV communication and navigation systems
 - Conduct pre-flight inspections and safety procedures
 - Prepare technical documentation and reports
 - Understand drone business operations and pricing
 - Develop entrepreneurial opportunities in the drone industry
-

CAREER OPPORTUNITIES

Graduates may work as:

- Drone Manufacturing Technician
- Agricultural Drone Operator
- UAV Service Technician
- Drone Flight Operator
- Precision Agriculture Assistant
- Drone Assembly Specialist
- UAV Maintenance Technician
- Crop Monitoring Assistant
- Drone Mapping Assistant
- Drone Business Entrepreneur
- Agricultural Drone Service Provider

RECOMMENDED FACILITIES & EQUIPMENT

Training Equipment

- Pixhawk flight controllers
- Training drones
- Agricultural spraying drone systems
- GPS modules
- Telemetry systems
- Brushless motors and ESCs
- Battery charging stations
- Flight simulators

Software Requirements

- Mission Planner
- ArduPilot
- Drone simulator software
- Mapping software

Workshop Equipment

- Soldering stations
- Multimeters
- UAV toolkits
- Calibration tools
- Safety equipment

FINAL HOUR SUMMARY

Module	Total Hours
Drone Manufacturing & UAV Systems	406
Drone Pilot Training & Flight Operations	346
Drone Servicing & Maintenance	186
Entrepreneurship & Financial Management	43
Additional Learning Activities	19
Grand Total	1000 Hours

CONCLUSION

This Advanced Diploma program is designed to produce highly competent drone professionals with strong practical exposure in:

- Drone manufacturing
- Agricultural drone operations
- UAV servicing and maintenance
- Commercial drone flight operations
- Drone entrepreneurship

The program integrates modern UAV technologies, practical learning methodologies, agricultural drone applications, and industry-oriented competency development to meet the growing demand in the drone and precision agriculture industries.



MODULE 01 DRONE MANUFACTURING & UAV SYSTEMS

1.1 Drone Components & Architecture



1.2 Electronics & Circuit Integration



1.3 Flight Controller & Firmware Setup



1.4 Power Systems & Battery Management



1.5 GPS, Navigation & Communication Systems



1.6 Assembly of Multicopter Drones



1.7 Testing, Calibration & Tuning



1.8 Payload Integration & Customization



MODULE 02 DRONE PILOT TRAINING & FLIGHT OPERATIONS

2.1 Drone Fundamentals & Aviation Regulations



2.2 Pre-Flight Inspection & Safety Procedures



2.3 Flight Controls & Manual Flying



2.4 Mission Planning & Mapping Operations



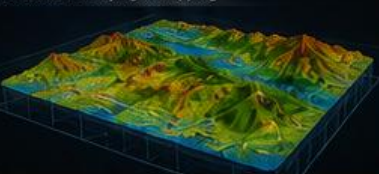
2.5 Autonomous Flight & Waypoint Missions



2.6 Agricultural Drone Operations



2.7 Aerial Surveying & Mapping



2.8 Aerial Photography & Videography



2.9 Night Operations & Thermal Imaging



2.10 Emergency Procedures & Risk Management



2.11 Flight Log & Reporting



2.12 Practical Field Training



MODULE 03 DRONE SERVICING & MAINTENANCE

3.1 Routine Inspection & Diagnostics



3.2 Troubleshooting & Fault Finding



3.3 Repairing & Component Replacement



3.4 Motor & ESC Testing



3.5 Battery Care & Performance Testing



3.6 Propeller & Frame Maintenance



3.7 Firmware Updates & System Calibration



3.8 Data Management & Black Box Analysis



3.9 Cleaning & Preventive Maintenance



3.10 Storage, Transport & Safety



3.11 Documentation & Service Reporting



3.12 Workshop Practice



MODULE 04 ENTREPRENEURSHIP & FINANCIAL MANAGEMENT

4.1 Business Opportunities in Drone Industry



4.2 Business Model & Planning



4.3 Cost Estimation & Pricing Strategy

Item	COST ESTIMATION	(₹/Month - Approx)
Drone & Equipment	1,050,000	
Accessories	250,000	
Software	120,000	
Maintenance	80,000	
Training	100,000	
Marketing	60,000	
Total	1,660,000	

Service	Price (LKR)
Aerial Mapping	25,000 / acre
Crop Spraying	12,000 / acre
Inspection	15,000 / site
Aerial Photography	20,000 / day
Training	30,000 / person

4.4 Marketing & Brand Development



4.5 Financial Management



4.6 Funding & Investment



4.7 Legal Requirements & Compliance



4.8 Customer Relations & Service Quality



4.9 Scaling & Business Expansion



4.10 Project Proposal & Pitching



4.11 Capstone Project - Start Your Drone Business

