SYLLABUS FOR BOARD OF STUDIES ADOPTION — generated from the live catalogue record

Precision Agriculture, Drones and Remote Sensing

X-G1 · 5 days (configurable 1–5 days) · Agricultural Sciences · Applied Science · Years: 2nd, 3rd, PG

CONTENTS

Catalogue X-G1 · version 1 · generated 2026-08-24

OVERVIEW

Students use drone imagery and remote sensing to guide real farm decisions.

Precision agriculture is transforming Indian farming; graduates who can turn drone and satellite data into farm decisions meet a fast-emerging, well-funded demand.

HOURS AND CREDIT POSITION

Contact hours: 40 Guided project: 20 Self-study: 0 Notional total: 60

Credit claim: 2
60 notional hours ÷ 30 hours per credit (NSQF track, UGC Micro-credentials Guidelines §5.3.3) = 2 credits.

COURSE OUTCOMES

CO1. Describe the precision-agriculture technology stack (K2)
CO2. Interpret vegetation indices from remote-sensing data (K4)
CO3. Plan a safe, compliant drone data-capture mission (K3)
CO4. Process drone imagery into index maps (K3)
CO5. Produce a farm decision recommendation from imagery (K5)

COURSE CONTENT — MODULES

Hours shown are the recommended format; module time scales proportionally when the engagement runs 1–5 days.

Module 1 — Precision agriculture foundations (5h recommended)
Theory: The concept, the technology stack
Lab: Map the precision-ag stack
Output: Stack map

Module 2 — Remote sensing (5h recommended)
Theory: Spectral bands, vegetation indices
Lab: Compute vegetation indices
Output: Index exercise

Module 3 — Drones in agriculture (5h recommended)
Theory: Platforms, sensors, regulations
Lab: Compare drone platforms
Output: Platform comparison

Module 4 — Flight and data capture (5h recommended)
Theory: Mission planning, safe and compliant operation
Lab: Plan a capture mission
Output: Mission plan

Module 5 — Image processing (5h recommended)
Theory: Orthomosaics, index maps
Lab: Process captured imagery
Output: Index maps

Module 6 — Data interpretation (5h recommended)
Theory: Crop health, stress detection
Lab: Interpret crop-health maps
Output: Health interpretation

Module 7 — Variable-rate application (5h recommended)
Theory: Prescription maps
Lab: Build a prescription map
Output: Prescription map

Module 8 — Capstone (5h recommended)
Theory: A farm analysis from captured imagery
Lab: Analyse a farm from imagery
Output: Farm analysis

ASSESSMENT SCHEME (100 MARKS)

Continuous exercises — 40 marks
Analytical report — 40 marks
Viva voce — 20 marks

CO–PO MAPPING

CO1 !’ PO1 (strength 2)
The technology stack is foundational domain knowledge.
CO2 !’ PO4 (strength 2)
Interpreting indices is investigation.
CO3 !’ PO6 (strength 2)
Safe, compliant drone operation is professional responsibility.
CO4 !’ PO5 (strength 2)
Image processing is modern-tool usage.
CO5 !’ PO10 (strength 2)
The farm recommendation is professional communication.

EVERY PARTICIPANT RECEIVES

- Certificate of completion
- Course material
- LMS access
- Interview question bank
- Mock interview & viva practice

FEE

¹3,200 per student, incl. GST
Excludes the optional nasscom assessment where offered. Final pricing on your college's quotation.

DESIGNED BY

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