Training Course on Cybersecurity and Data Privacy in Digital Agriculture

Professional Development Training Course Outline

Category	Agriculture	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In the era of digital transformation, agriculture has rapidly embraced smart technologies, IoT-enabled devices, big data analytics, and AI-driven decision-making. While these innovations enhance productivity, they also introduce significant cybersecurity threats and data privacy challenges. As agriculture becomes increasingly dependent on digital infrastructure, safeguarding sensitive data—from farm-level analytics to satellite-driven crop monitoring—has become a critical necessity. Cybersecurity in digital agriculture is no longer optional but essential to protect systems, ensure food security, and build trust among farmers and stakeholders.

Training Course on Cybersecurity and Data Privacy in Digital Agriculture is designed to equip stakeholders with the knowledge and practical skills to identify cyber threats, manage risks, and comply with global data protection regulations. With a strong emphasis on data governance, AI ethics, smart farming security, and digital resilience, the course prepares participants to thrive in the complex intersection of agriculture and technology. The modules are enriched with real-world case studies, trend-focused content, and hands-on tools to promote secure digital agriculture ecosystems.

Programme Curriculum

Training Course on Cybersecurity and Data Privacy in Digital Agriculture

Introduction

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Course Objectives

1. Understand the fundamentals of cybersecurity in smart agriculture.
2. Identify emerging cyber threats to IoT devices used in farming.
3. Analyze data privacy regulations applicable to agricultural data.
4. Evaluate risks in cloud-based farm data systems.
5. Apply blockchain solutions for data integrity in agri-tech.
6. Design secure AI-driven precision agriculture systems.
7. Detect vulnerabilities in drone and sensor networks.
8. Integrate cybersecurity best practices into agribusiness operations.
9. Understand ethical concerns in digital agriculture data usage.
10. Implement incident response protocols for farm tech breaches.
11. Conduct risk assessments for agricultural IT infrastructure.
12. Develop cyber hygiene practices for rural/agricultural communities.
13. Explore cyber insurance and recovery models in agri-tech sectors.

Target Audience

1. Smart Farmers & Agripreneurs
2. Agricultural Extension Officers
3. Agritech Developers & Engineers
4. Policymakers in Agriculture & Technology
5. Agricultural Supply Chain Managers
6. ICT and Data Security Professionals
7. Research Institutions & Academic Scholars
8. Digital Agriculture Startups & Investors

Course Duration: 10 days

Course Modules

Module 1: Introduction to Cybersecurity in Digital Agriculture

- Overview of digital agriculture trends
- Key cybersecurity concepts
- Cyber risks in smart farming
- Importance of digital resilience
- Stakeholders' roles in cyber defense
- **Case Study**: Cyberattack on a smart irrigation system

Module 2: IoT and Sensor Network Security

- Structure of agricultural IoT ecosystems
- Common vulnerabilities in sensors
- Device authentication protocols
- Secure firmware and software updates
- Monitoring and anomaly detection
- **Case Study**: Compromised soil sensor network in India

Module 3: Cloud Security in Agricultural Data Storage

- Benefits of cloud services in farming
- Cloud-based threat models
- Encryption and access control
- Cloud service provider SLAs
- Backup and disaster recovery planning
- **Case Study**: Data breach in cloud-based agri-data platform

Module 4: Data Privacy and Compliance in Agriculture

- Understanding GDPR, CCPA, and local laws
- Consent management and transparency
- Data anonymization techniques
- Privacy Impact Assessments (PIAs)
- Rights of data subjects in agriculture
- **Case Study**: Legal battle over unauthorized farm data use

Module 5: Cybersecurity for Drones and Remote Sensing

- Drone data interception risks
- Securing GPS and telemetry data
- Real-time transmission protection
- Airspace regulations and protocols
- Securing drone software and apps
- **Case Study**: Unauthorized drone data leak in Kenya

Module 6: Precision Agriculture and AI Security

- Role of AI in crop monitoring
- AI model poisoning threats
- Data bias and algorithm transparency
- Securing training data sets
- AI regulation in agriculture
- **Case Study**: AI malfunction in pest prediction tool

Module 7: Blockchain in Agricultural Cybersecurity

- Basics of blockchain technology
- Applications in supply chain traceability
- Smart contracts in agri-trade
- Blockchain-based identity management
- Decentralization and security benefits
- **Case Study**: Coffee blockchain pilot in Ethiopia

Module 8: Human Factors and Cyber Hygiene

- Role of farmer awareness and training
- Password and device management
- Identifying phishing and malware
- Secure usage of mobile farm apps
- Awareness campaigns and training needs
- **Case Study**: Social engineering scam targeting farmers

Module 9: Risk Assessment and Vulnerability Analysis

- Frameworks for assessing cyber risks

- Vulnerability scanning tools
- Cyber risk matrices
- Prioritizing risk remediation
- Continuous assessment cycles
- **Case Study**: Threat modeling a digital greenhouse

Module 10: Developing a Cybersecurity Strategy

- Building an incident response plan
- Creating cybersecurity policies
- Assigning cyber roles and responsibilities
- Aligning with NIST and ISO standards
- Budgeting for cybersecurity investments
- **Case Study**: Strategic cybersecurity roadmap for a co-op

Module 11: Secure Digital Supply Chains

- Agri-supply chain digitization risks
- Data integrity and product traceability
- Third-party vendor risk management
- Digital payment system security
- Fraud detection in agri-logistics
- **Case Study**: Cyber breach in cold chain logistics

Module 12: Digital Ethics and Responsible Innovation

- Ethical principles in data usage
- Farmer data sovereignty
- AI fairness and accountability
- Community consent and trust building
- Transparency in digital tool design
- **Case Study**: Ethical dilemma in data monetization app

Module 13: Cybersecurity Tools and Technologies

- Anti-virus and endpoint protection
- Firewall configuration for farm networks
- Virtual Private Networks (VPNs)
- Intrusion Detection Systems (IDS)
- Security Information and Event Management (SIEM)
- **Case Study**: Deploying a cyber toolkit in a rural co-op

Module 14: Building Cyber Resilient Agri-Enterprises

- Concepts of resilience vs. security
- Cyber maturity models
- Incident logging and post-breach actions
- Cyber drills and tabletop exercises
- Enhancing supply chain resilience
- **Case Study**: Resilience plan for a digital agri-startup

Module 15: Policy, Advocacy, and Future Outlook

- Government and institutional roles
- Cybersecurity policy frameworks
- Advocacy for rural cyber inclusion

- Public-private partnerships
- Future trends: quantum, 5G, and beyond
- **Case Study**: National cybersecurity policy for smart farms

Training Methodology

- Interactive lectures and expert-led presentations
- Hands-on demonstrations using real agri-tech tools
- Simulated cyber incident scenarios and case-based learning
- Group discussions on policy and ethical issues
- Field-based assessments and farm-level cyber audits
- Pre- and post-training evaluation for impact measurement

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
21 Sep 2026	02 Oct 2026	Online	$2,000
21 Sep 2026	02 Oct 2026	Physical	$3,000
21 Sep 2026	02 Oct 2026	Physical	$0

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21 Sep 2026	02 Oct 2026	Physical	$0
21 Sep 2026	02 Oct 2026	Physical	$0
21 Sep 2026	02 Oct 2026	Physical	$0
21 Sep 2026	02 Oct 2026	Physical	$0
21 Sep 2026	02 Oct 2026	Physical	$0

Ready to enroll or request a customized program? Book online or contact us:

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