

# Pre-Course Materials

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## AGRICULTURAL DATA ANALYTICS



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READ

Read

## DATA ANALYTICS IN AGRICULTURE: ENHANCING DECISION-MAKING FOR CROP PRODUCTION

A peer-reviewed paper exploring how IoT, sensors, and big data are revolutionizing traditional farming into smart, data-driven operations. It offers a clear overview of the agricultural data value chain, from capture to feedback, showing how modern tools help farmers make more informed, precise decisions to optimize crop yields.

🔗 [LINK](#)

Read

## THE ROLE OF DATA ANALYTICS IN MODERN AGRICULTURE

This practitioner-oriented blog article introduces how farms and enterprises are harnessing analytics to streamline operations, track inputs, and improve production outcomes. Written for students new to the field, it provides accessible insights into real-world applications of agricultural data, helping learners understand the tangible impact of analytics in farming.

🔗 [LINK](#)

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## SMART FARMING WITH DATA-DRIVEN AGRICULTURE

A concise yet insightful article that highlights how data analytics tools can visualize crop health, monitor cultivation, and optimize supply chains. It emphasizes practical applications such as satellite imagery, soil monitoring, and weather-layer integration, making it a great resource for linking analytics to operational decisions in modern farming.

 [LINK](#)

Read

## DATA ANALYTICS FOR CROP MANAGEMENT: A BIG DATA VIEW

A systematic review published in the Journal of Big Data that surveys advanced data-mining techniques applied in agriculture, including yield prediction, plant phenotyping, and remote sensing. This is ideal for students engaging in exploratory data analysis, geospatial work, or anyone wanting deeper context on how big data drives smarter crop management.

 [LINK](#)

# AGRICULTURAL DATA ANALYTICS

**LISTEN**

Listen

## PRECISION POINTS: AN AG TECH PODCAST

A podcast series from Precision Ag Reviews that explores precision agriculture technologies and their practical impact for growers. Through interviews and case studies, listeners gain insight into how data-driven solutions are shaping farm management and transforming operational efficiency in the field.

 [LINK](#)

Listen

## THE FUTURE OF FARMING: AI, DIGITAL AGRONOMY AND THE WATER CRISIS

This podcast episode dives into how AI and digital agronomy address major agricultural challenges, including water scarcity, climate resilience, and yield optimization. Listeners hear from experts on the cutting-edge technologies that are redefining sustainable farming practices worldwide.

 [LINK](#)

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**LISTEN**

Listen

## AGRICULTURE TECHNOLOGY PODCAST

A bi-weekly show focused on the latest innovations in precision agriculture and farm technology. Covering everything from sensors and drones to analytics platforms, this podcast is particularly useful for students interested in the technical stack behind modern agricultural data workflows.

🔗 [LINK](#)

Listen

## “HARVESTING THE BENEFITS: AI AND AGRICULTURE” (AI AT SCALE PODCAST EPISODE)

In this episode, industry leaders—including Louis Dreyfus Company’s Chief Data Officer—share how AI, satellite data, and predictive analytics are transforming global agriculture. A motivating listen for students preparing for Week 8 and final reflections, it highlights the real-world impact of advanced analytics on food production.

🔗 [LINK](#)

# AGRICULTURAL DATA ANALYTICS

# WATCH

Watch

## UNDERSTANDING PRECISION AGRICULTURE USING DATA AND ANALYTICS

A foundational YouTube video introducing how data and analytics bring scientific rigor to the field. Perfect for students with minimal experience in remote sensing, it demonstrates how modern tools inform decision-making and improve efficiency across farms.

 [LINK](#)

Watch

## BIG DATA IN AGRICULTURE: HOW DATA ANALYTICS BOOSTS FARM PRODUCTIVITY

This video illustrates how big data and advanced analytics are transforming modern agriculture, from field sensors to predictive models. It's a great resource for seeing the practical applications of analytics in optimizing crop production and operational workflows.

 [LINK](#)

Watch

## MAKING SOILS DATA ACTIONABLE – PRECISION AGRICULTURE TECHNOLOGY & DATA (WEBINAR)

A technical webinar exploring how soil data is collected, analyzed, and converted into actionable insights through precision agriculture technology. It helps students understand the link between raw data and informed farm management strategies.

 [LINK](#)

# AGRICULTURAL DATA ANALYTICS

**WATCH**

Watch

## WHAT'S NEXT: AI, AUTOMATION & AG DATA IN 2025

A forward-looking video examining the 2025 outlook for North American agriculture. It covers drones, LiDAR, automation, and expanding data systems, offering students insight into the future of precision agriculture and emerging tech trends.

 [LINK](#)

Watch

## CROP MONITORING WEBINAR: ADVANCED ANALYTICS FOR PRECISION FARMING

Focused on soil data, this webinar shows how to collect, interpret, and integrate soil health metrics into operational decisions. It gives students a hands-on understanding of how precision analytics guides sustainable crop management.

 [LINK](#)

# AGRICULTURAL DATA ANALYTICS

# ENGAGE

Engage

## UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) NASS QUICK-STATS PORTAL

An extensive repository of U.S. agricultural statistics, organized by county, commodity, and year. This portal invites students to explore real-world datasets and begin thinking critically about how data can inform agricultural decision-making.

🔗 [LINK](#)

Engage

## REDDIT THREAD: AGRICULTURAL ANALYTICS / PRECISION FARMING DATA

A candid discussion on Reddit's r/AnalyticsAutomation forum where practitioners share insights on capturing and analyzing data—from soil moisture to weather patterns and machine performance. A great way for students to engage with the community and see data challenges and solutions in real-world contexts.

🔗 [LINK](#)

# AGRICULTURAL DATA ANALYTICS

# ENGAGE

Engage

## UNITED STATES DEPARTMENT OF AGRICULTURE AGRICULTURAL RESEARCH SERVICE (ARS) DATASETS – AG DATA COMMONS

A curated collection of datasets covering a wide range of agricultural research topics. Students can explore experimental and observational data, providing a practical foundation for analysis, modeling, and data-driven insights in farming.

 [LINK](#)