

PRECISION AGRICULTURE CERTIFICATE

MISSION AND PURPOSE

The Precision Agriculture Certificate prepares students for emerging careers in precision agriculture by balancing agronomy fundamentals with advanced technology and software training. With a focus on data-driven crop management, hardware systems, and digital tools, the program equips students to support modern farming operations through the use of GPS, GIS, sensors, automated equipment, and remote imaging technologies. Students will gain practical experience with software platforms and technology integration, preparing them for positions in agronomic data management, precision farming equipment support, or agricultural technology services.

The mission is to develop skilled professionals who can apply advanced technologies and data analysis to improve agricultural production systems. The certificate is suited for students pursuing careers in agricultural production, agronomy, equipment technology, or other related industry roles. Graduates will be career-ready to implement and support precision agriculture systems that optimize efficiency, sustainability, and profitability in today's agricultural operations.

PROGRAM OBJECTIVES AND STUDENT LEARNING OUTCOMES

Upon completion of the Precision Agriculture Certificate, students will be able to:

1. Apply precision agriculture technologies to collect, analyze, and interpret agronomic data.
2. Operate and troubleshoot precision agricultural hardware and software.
3. Utilize data management software and analytics to support decision-making in crop production and resource use.
4. Demonstrate knowledge of sustainable farming practices and how precision tools enhance productivity and environmental stewardship.
5. Communicate technical information to producers, agronomy teams, or technology service providers in a professional agricultural setting.

Course	Title	Credits
Required Courses		
SCSCI 3280	Precision Agriculture Technologies	3
SCSCI 4200	Precision Agriculture Data Management	3
SCSCI 4210	Precision Agriculture Hardware	3
Precision Agriculture Electives:		6
AETM 1200	AC/DC Fundamentals	
AETM 1530 or AGET 1750	Power Systems Technology Equipment, Structure and Power Systems	
AETM 3550	Fluid Power and Servo Systems	
AETM 3560	Industrial Control Systems	
ENVSS 3230	Geographic Information Systems	
ENVSS 3510	Drones: Unmanned Aerial Systems (UAS) Operations and Imaging	
SCSCI 4380 or SCSCI 4390	Undergraduate Research in Soil Science * Undergraduate Research in Crop Science	
Total Credits		15

* The semester-long projects must be in the area of Precision Agriculture.