

**Course Code:** AGB 215

**Course Title:** Applications of GIS in Agriculture

**Department:** Agricultural Technologies

**Effective Date:** Summer 2026

**PCS Code:** 1.2 - Occupational/Technical Instruction

**CIP Code:** 01.0201

**Repeatability:** 0

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## Credit Hours

**Catalog Notation:** 3-0-3

**Credit Hour Distribution:**

Lecture: 3

Lab: 0

Clinical: 0

**Total: 3**

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## General Course Information

### Catalog Description

Fundamental processes of geographic information systems (GIS) with application to agriculture. File formats, database management, spatial analysis, and manipulation of data. Georeferenced data from mapping and yield monitoring.

### General Course Objectives

This course will fulfill the objectives of using a Geographic Information System, the examination of special GIS considerations of precision farming data processing and reporting, and the ability to develop and manipulate data.

### Minimum Placement Levels

English	Reading	Math
None	Placement into CCS 098	None

### Prerequisites

None

### Methods of Evaluation

The students will have as a minimum 3 written exams, 6 quizzes, and 4 projects.

### Instructional Materials and Additional Supplies

Software: John Deere Ops Center, SMS, ArcGIS, Microsoft Excel, Microsoft PowerPoint

## Course Content

### General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

### Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Overview of Geographic Information Systems (GIS) Applied to Agriculture	<ol style="list-style-type: none"> <li>Define site-specific and precision farming.</li> <li>Describe the benefits of GIS to agriculture.</li> <li>Describe the relationship between GIS and Global Positioning Systems (GPS).</li> <li>Demonstrate GIS relational databases.</li> <li>Describe GIS in record keeping and management.</li> </ol>	6	0	0
Data Considerations: Common GIS Engines and Data Formats; Import/Export of Data and Specific Precision Farming Data Considerations	<ol style="list-style-type: none"> <li>Import boundaries.</li> <li>Import planting data.</li> <li>Import yield data.</li> <li>Import soil sampling data.</li> <li>Import remote or proximal sensing data.</li> </ol>	29	0	0
Understanding and Creating Input Prescriptions	<ol style="list-style-type: none"> <li>Understand the data layers that go into prescription making.</li> <li>Create various input prescriptions.</li> </ol>	6	0	0
Implementation Strategies; Understanding ROI as It Relates to Applications of GIS in Agriculture	<ol style="list-style-type: none"> <li>Understand the key factors for providing precision agriculture products or services as they relate to applications of GIS in agriculture.</li> </ol>	4	0	0

#### Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	0	0