



**AGR 1515**  
**Introduction to GPS in Agriculture**  
**Course Syllabus**  
**Term: Fall**

Rhodes State College  
Division Health Sciences and Public Service  
Agriculture Technology Program

3 Credit Hours  
3 Contact Hours

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OAN: None

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**Mission Statement:** Rhodes State College changes lives, builds futures and improves communities through life-long learning.

**Program Mission Statement:**

The Agriculture Technology program is designed to provide students with practical education in an increasing demand field of agriculture business, agronomy, prescription mapping, and/or robotics and artificial intelligence.

**Program Learning Outcomes:**

- Communicate effectively in both written and oral form with coworkers, customers, and others in and about agriculture technology.
- Research, design, and use best practices to create environmentally sustainable, productive, and economically viable solutions to agricultural problems and challenges.
- Demonstrate initiative, leadership, and planning in building professional relationships in the agriculture community, and workplace.
- Locate and use information and numerical data in solving problems related to agriculture.

## OVERVIEW

### Catalog Description:

Advances a foundational understanding of global positioning system (GPS) theory and use. Evaluates different applications of GPS by collecting and analyzing data for decision-making and troubleshooting in agriculture. Studies of historical and current events related to GPS will illustrate GPS principles, applications and uses in action.

### Prerequisites

AGR 1000 Introduction to Agriculture

### Meeting Dates and Times:

TBA

### Course Delivery:

Lecture, laboratory and/or online

### TEXT AND MATERIALS/SUPPLIES:

Materials provided

### STUDENT LEARNING OUTCOMES:

- Recognize various GPS systems and uses related to agriculture including future uses.
- Transfer data between different agriculture equipment in geolocation activities.
- Input GPS data into software systems to create maps.
- Use various GPS systems to pinpoint given locations.

### SCHEDULE OF INSTRUCTIONAL ACTIVITIES:

| Week | Topic(s)  |
|------|---|
| 1    | Intro to GPS Technology, Lat/Long, Sources of Error                       |
| 2    | RTK, DGPS, Datum, Precision and Accuracy                                  |
| 3    | Guidance, AB Lines, Remote Sensing  |
| 4    | Intro to Global Mapper  |
| 5    | Collection of Data from outside sources and use on maps                   |
| 6    | Collection and use of boundary data on mobile devices                     |
| 7    | Using layered data to interact with other GPS software                    |
| 8    | Collecting GPS location Data for Crop Scouting                            |
| 9    | Building a Soil Sampling Plan and exporting to mobile device              |
| 10   | Using maps, mobile devices, GPS data to collect soil samples              |
| 11   | Building Templates in SMS, importing old data                             |
| 12   | Intro to ArcGIS   |
| 13   | How to use Old Data, correcting old data                                  |
| 14   | Using tools to build elevation maps and tile installation maps            |
| 15   | Data Ownership issues, manipulating personal data for farm implementation |

## **LABORATORIES, CLINICALS, FIELD WORK/ SPECIAL REQUIREMENTS:**

### **TESTING AND EVALUATION:**

Assignments  
Demonstrations  
Problems  
Lab Reports  
Quizzes  
Exams

### **Grading Scale:**

A 93-100  
A- 90-92.9  
B+ 87-89.9  
B 83-86.9  
B- 80-82.9  
C+ 77-79.9  
C 73-76.9  
C- 70-72.9  
D+ 67-69.9  
D 60-66.9  
E 0-59

### **Course Scoring:**

|                      |     |
|----------------------|-----|
| Quizzes              | 20  |
| Homework/Assignments | 40  |
| Exams                | 40  |
| Total                | 100 |

## **INSTRUCTOR EXPECTATIONS:**

### **Attendance/Participation:**

Students are expected to attend weekly lectures and participate in activities when assigned. Periodically, unexpected events can cause a student to miss class. When possible, please communicate with the instructor ahead of time when absences must occur. A plan will be put into place to ensure the student can keep up with the course.

### **Makeup Policy:**

Unless excused, late assignments, quizzes, and exams will be deducted by 10% per week. Accommodations will be made for excused absences without penalty. Students are expected to make up work from excused absences within a reasonable amount of time.

## INSTITUTIONAL INFORMATION



### PARTICIPATION

#### **Attendance:**

Regular attendance is important to understand course content and perform required competencies. Absences, late arrivals, and early departures will negatively impact your grade and may result in a grade of "E" which may harm your Financial Aid eligibility. Please ensure that you understand the attendance policy for each course and follow the instructor's guidelines for communicating about unavoidable absences and making up course work, if permissible.

#### **E-mail:**

You are responsible for checking your College email frequently for college and course-related communications. RSC recommends checking email daily in recognition that certain communications may be time-sensitive. Please use proper etiquette when submitting emails to College personnel: a positive tone, correct spelling and grammar, and verify the intended recipient's title and address before sending the email. These details will expedite communication.

#### **Incomplete:**

The grade of incomplete ("I") in a course is a temporary grade, reflecting that while your work in the course is qualitatively satisfactory, but for some extenuating circumstances, a small fraction cannot be completed by the scheduled end date. Before an "I" can be awarded, there must be a plan in place, verified by signatures or emails by both you and your instructor, outlining exactly what work must be accomplished and a schedule for doing so. The student must complete and submit the coursework no later than the sixth Friday following the start of the semester or term subsequent to the one in which the "I" was received. Failure to adhere to this plan will result in calculating the course grade with 0s for all remaining assignments. Until the "I" is resolved, the credit hours will not be counted or considered for any purpose. Your financial aid and academic standing may be negatively impacted. For more information see the College Catalog "Grading System" and "Registration."

In short, taking an incomplete should be avoided. However, if it becomes impossible for you to complete a course, please contact your instructor and Financial Aid advisor immediately.

#### **Withdrawal:**

You are responsible to officially drop/withdrawal from a course when you decide to no longer attend class. Without an official drop/withdrawal from the Office of Advising and Counseling, the institution has the right to identify a date of drop/withdraw. This may result in receiving an "E" in all classes and being required to pay all assessed fees and tuition, even though you have actually left the College. Any/all of these may have a negative impact upon future Financial Aid eligibility. Please contact your Academic and Financial Aid Advisors for assistance.

## STUDENT CODE OF CONDUCT

### Academic Integrity:

Attempting to deceive, defraud, or use dishonesty for one's own gain will not be tolerated. Dishonesty in any form may result in a grade of "zero" for the activity, whether in providing or utilizing materials inappropriately. Additionally, individual programs may impose greater sanctions. This includes – but is not limited to – plagiarism, attempting to pass off someone else's work as one's own; submitting substantially the same work, using materials created for one course in another without the instructor's knowledge and permission; securing/providing answers to a test apart from the instructor's directions, etc. Students are encouraged to review the Student Code of Student Conduct on the college website

(<http://www.rhodesstate.edu/currentstudents>) for additional information.

### Student Support:

| Resources                           | Location                   | Phone  | Email/Website   |
|-------------------------------------|----------------------------|--|---|
| Accommodative Services              | TL 132                     | 419-995-8476                                       | <a href="mailto:TestCenter@rhodesstate.edu">TestCenter@rhodesstate.edu</a>  |
| Advising                            | PS 218                     | 419-995-8400                                       | <a href="mailto:Advising@rhodesstate.edu">Advising@rhodesstate.edu</a>  |
| Campus Security                     | TL 140                     | 419-995-8499<br>(Non-emergency)                    | <a href="mailto:mathews.m@rhodesstate.edu">mathews.m@rhodesstate.edu</a>  |
| Career Development                  | JJC 179J                   | 419-995-8352                                       | <a href="mailto:CareerDevelopment@rhodesstate.edu">CareerDevelopment@rhodesstate.edu</a>  |
| Computer Help Desk                  |                            | 419-995-8069                                       | <a href="mailto:HelpDesk@rhodesstate.edu">HelpDesk@rhodesstate.edu</a>  |
| Counseling Services                 | Email,<br>Text, or<br>Call | Call:<br>855-695-2817<br>Text: "Hello" to<br>61295 | StudentLifeServices.com<br>(password: rhodes)   |
| Financial Aid                       | PS 148                     | 419-995-8802                                       | <a href="mailto:Finaid@rhodesstate.edu">Finaid@rhodesstate.edu</a>  |
| Internships & Experiential Learning | JJC 179H                   | 419-995-8053                                       | <a href="mailto:Internships@RhodesState.edu">Internships@RhodesState.edu</a>  |
| Library                             | CK150                      | 419-995-8401                                       | <a href="https://osu.libguides.com/?group_id=1788">https://osu.libguides.com/?group_id=1788</a>   |
| OSU Police                          | GA 134                     | 567-242-7400<br>(Non-emergency)                    | <a href="https://lima.osu.edu/faculty-and-staff/administration/security/">https://lima.osu.edu/faculty-and-staff/administration/security/</a> |
| Testing Center                      | TL132                      | 419-995-8476                                       | <a href="mailto:TestCenter@rhodesstate.edu">TestCenter@rhodesstate.edu</a>  |
| Tutoring                            | SCI 240                    | 419-995-8039                                       | <a href="mailto:academicsuccesscenter@rhodesstate.edu">academicsuccesscenter@rhodesstate.edu</a>  |

### ADA Reasonable Accommodations:

Accommodative Services supports all students with documented disabilities who are enrolled for credit. Students needing accommodations at Rhodes State should contact Accommodative Services in person in the Technical Education Laboratory building, Room 132 (TL 132), via email at [AccommodativeService@RhodesState.edu](mailto:AccommodativeService@RhodesState.edu), or via telephone at 419-995-8009. Students must meet with Accommodative Services, receive an Accommodations Letter, and present the letter to the instructor **before accommodations take effect. Accommodations are not retroactive.**

### Comprehensive Early Alert Program (CEAP):

Rhodes State employs a Comprehensive Early Alert Program (CEAP) to identify and provide just-in-time support for students who are having academic difficulties. It is a process by which your instructor will "alert" you and an advisor or success coach when you are absent, frequently late or leaving early, have missed assignments, or earned low test scores. CEAP enhances existing services, such as advising, coaching, and tutoring, which increase student success. Please contact your instructor, advisor, or success coach to learn about what assistance might be

available.

## **CAMPUS COMMUNICATION**

### **College Closures:**

Please sign up for **Rhodes Alert** which can be found on the RSC website. Rhodes Alert was created to provide students with Emergency Notifications in the event of Weather Emergencies, Weather Closures, and Campus Security Threats. These notifications will be delivered via phone, email, and text message. The local TV and radio stations also post information about College closures. When referring to a media outlet, please remember to look specifically for RSC as other institutions may follow different protocols for weather cancellations.

### **Weather Delays and Cancellations:**

In the event that weather forces a delay to the start of the academic day, the College will announce when classes will begin. Classes starting and ending prior to the announced start time are cancelled. If the class starts before the announced start time but still has more than 30 minutes of class remaining after the start time, that class will begin at the announced specific time and end at its normal time. This same 30-minute rule will be used in the event of an early closure of the College. The portion of the class which was scheduled prior to the announced closure time would be cancelled.

Because travel to clinical/practicum experiences may begin at an early hour, program leadership may delay the start to enable the College to assess weather conditions and allow for the College's communication process to occur. Always, please exercise your best judgment in determining whether to attend classes or activities sanctioned by RSC. Remember that you are accountable for any material missed during an absence without an official delay or announced cancellation.

### **Emergency Procedures:**

**Students are responsible for following appropriate campus emergency procedures.** Students are encouraged to review the Building Emergency Action Plan on the college website: (<http://www.rhodesstate.edu/About%20Rhodes/College%20Offices%20and%20Departments/Security-Safety/Emergency%20Information.aspx>)

**Rhodes State College is a tobacco-free campus.  
This includes all smoked, chewed, vaporized, and electronic forms.**